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TRI-STATE MEDICAL SOCIETY
MEDICO-LEGAL SOCIETY

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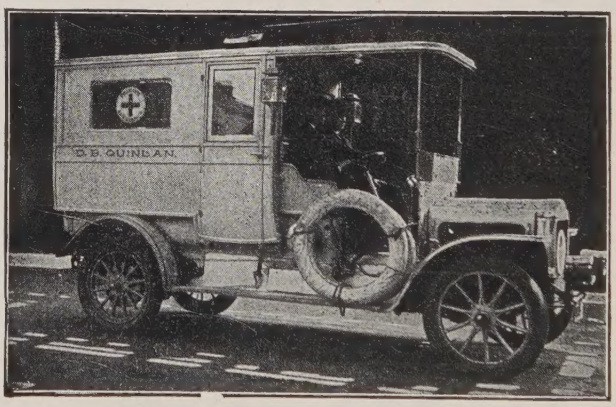

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Contents

Original Articles

A Pharmacodynamic Consideration of Thyroid Secretion—Vincent A. Lapenta, M.D..... 295
Goiter in Utah—J. S. Alley, M.D..... 301
Toxic Goiters of the Adolescent Age—J. Earl Else, M. D., and Barton Peden, M. D..... 304
Exophthalmic Goiter Before and After Operation—Chas. C. Tiffin, M.D..... 308
Value of Blood Settling Time in Goiter—Jos. L. DeCourcy, M.D..... 311

Editorials

Dr. John E. Rhodes..... 316
The Physician and His Fee..... 316
Getting a Jury..... 317
Saving the Babies..... 318
From the Knights of the Dark Night..... 318

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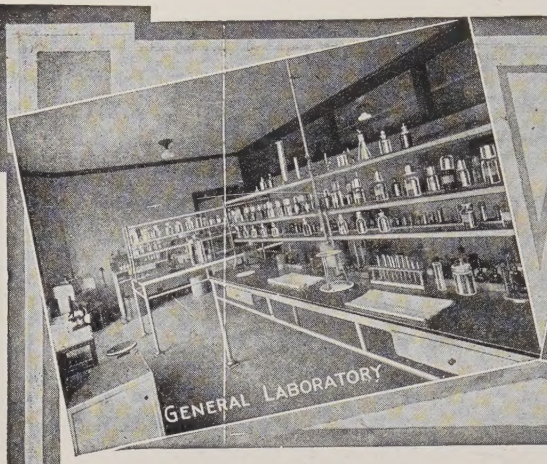

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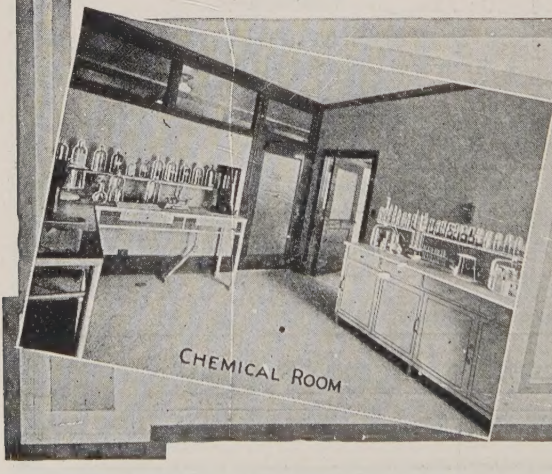

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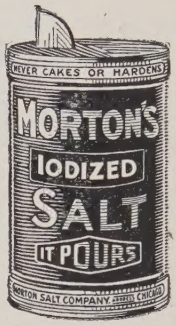

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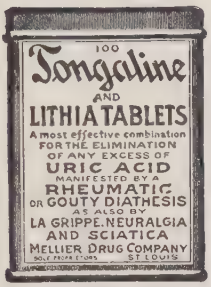

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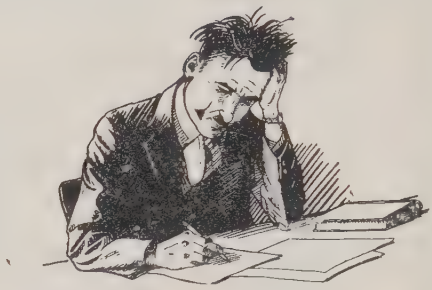

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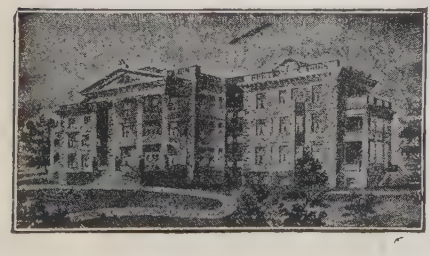

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The New York Pharmacal Association
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The
Chicago Medical Recorder

Official Journal
of
The American Association for the Study of Goiter

Vol. XLVII SEPTEMBER, 1925 No. 9

ORIGINAL ARTICLES

A Pharmacodynamic Consideration of Thyroid Secretion*

Vincent A. Lapenta, M. D., Senior Surgeon and President of the Medical and Surgical Staff, St. Francis Hospital, Indianapolis, Ind.

The rapid and tumultuous advances that have been made in the study of Endocrinology have made it necessary to endeavor to elucidate the relationship of various symptom complexes to the lesions of one or more of the ductless glands.

This method has, undoubtedly, helped in defining many obscure syndromes into well ascertained and recognizable clinical states, and, indirectly, such a study has forced physiologists and clinicians alike to a new study of the problems of constitutional variations and the inferences from these studies are becoming of increasing importance in the domain of clinical medicine, in all its aspects, so that we can truly speak of a science of constitutional Pathology. But this method is not without its faults and, without its disadvantages, since, as the literature of the past 20 years shows, it has led in many instances to unwarranted generalizations. So many conclusions, sustained by incomplete evidence have often been advanced, resulting purely from undisciplined imagination, as to have caused a revolt on the part of conservative investigators and caused them to assume an attitude of stubborn negativism toward the subject as a whole. It can be stated that the controversy regarding the exact role of the ductless glands in health and disease is but barely begun.

As deplorable as excessive enthusiasm and the tendency to easy generalization may be, we are forced to admit that the extreme negativists are offering still much less evidence for their negations than the enthusiasts, and that their attitude is more deleterious, since the enthusiasts at least compel more or less study of the subject by serious minded workers; the negativists instead paralyze

*Read before the American Association for the Study of Goiter at Atlantic City, May, 1925.

all action for progress, by the air of finality with which they clothe their negations.

In the study of the functions of the ductless glands it has seemed to me that we have neglected a collateral method from which a large amount of valuable information can be secured. Much of this information is of immediate therapeutic value, and it can lead to a considerable amount of new physiological research that may result in valuable contributions to the advancement of Endocrinology.

I intend to speak of the pharmacodynamic method of studying the physiological action of various organ extracts or their known active principles, in the same manner that we employ in studying the physiological action of various chemicals, drugs or alkaloids. In so doing we are not forced to formulate any special hypothesis or build up more or less unwarranted or inconsistent theories.

The pharmacologic study of these agents will give us facts on which to base therapeutic indications. No gland of internal secretion lends itself better to this method of study than the thyroid gland.

Pharmacodynamic Action of the Thyroid

A brief consideration of the pharmacodynamic action of the thyroid secretion will show a wealth of information which interpreted according to the pharmacologic method will lead to much future progress. It is obvious that we must exclude from this study the effects of removal of the gland, since this falls under the domain of Physiology and Endocrinology proper. We shall concern curselves solely with the well ascertained physiological action attending the administration of standardized thyroid substance and the various active principles isolated from it.

Let us begin with thyroid substance itself. We can consider as definitely proved that thyroid substance and its active principle, Thyroxin, are physiologically very potent when administered by mouth. The gastric secretion and intestinal digestion evidently do not exert any appreciable destructive action on its active constituents.

We should bear in mind the variations of results occurring in different individuals that are quite often influenced by sex, age, pathological or physiological alterations present in other organs, particularly in other glands of internal secretion. Some of these variations are not easily explainable as we shall see later, although the biological origin of the thyroid substance studied has some influence; the thyroid substance, derived from certain animals, being different in action from that of several other species, this peculiarity not entirely depending on the iodine content. This view is shared by several investigators and emphasized by Pende in his work on Endocrinology.

It is well to consider first the action of the thyroid secretion on the general metabolism. The increase that it brings about in the oxygen consumed and CO_2 eliminated, shows a positive and undeniable increase in the metabolic rate. This increase has been definitely measured with Thyroxin in a quantitative manner by the work of the Mayo Clinic investigators. (Kendall, Boothby and Sandsford (1), and Plummer.

Magnus Levi and Steyrer (2) have also been able to confirm the work and point out that in the very healthy the increase in the metabolic rate is much slower and seldom reaches above 25% plus, whereas in hypothyroid individuals and particularly in myxedematous the increase can reach as high as 100% plus.

With such action of the thyroid secretion and particularly in relation to the increase in the metabolic rate, we must

note, that we would naturally expect an increase in nitrogen elimination which is always accompanied by increased water secretion and increased elimination of chlorides, sulphates and phosphates.

Hand in hand with this increased nitrogen metabolism proceeds an increased combustion of the fats.

The influence of the thyroid secretion on metabolism was first demonstrated by Frederick Mueller (3).

The increased metabolism of protein, unless compensated by a copious protein diet, will result in a very serious cachexia. The administration of carbohydrates will diminish the destructive action of the thyroid secretion on protein. Fats also have about the same protein sparing effect.

Pende (4) emphasizes the difference of the physiological action of the thyroid substance, when administered in very small frequent doses from the administration of large doses. The administration of small doses seems to be distinctly anabolic, stimulating the general anabolic metabolism, both in normal and myxedematous patients. Hunt (5) lays special stress on the fact that when the amount of thryroid substance administered surpasses the physiological deficiency that may exist, its action is toxic and the effects produced are to be considered as toxic rather than physiologic in the strictest pharmacologic sense.

The results of our clinical observations are entirely in harmony with the findings of the above mentioned investigators, and we have been able to note this very strikingly in cretinism and myxedema, as well as in healthy persons, showing no apparent signs of hypothyroidism. Particularly interesting have been to us the effects obtained by the administration of very small doses of thyroid substances, as low as 1/30 of a grain three times a day to underweight adolescents showing no signs of thyroid dysfunction. The increase in weight in some of these patients has been in some instances very marked, one patient gaining 14 lbs. in less than 4 months with the usual food intake customary with him before beginning treatment. It seems, therefore, obvious that a very potent agent like the thyroid substance shall be considered from a pharmacodynamic as well as physiological standpoint. We cannot escape the conclusion that the time has come to consider the administration of this substance from pharmacological indications, the same as we do with strychnine, digitalis and other drugs of well known pharmacology, and that we must consider, with the exception of clinical syndromes of hypothyroidism the effects obtained, as pharmacodynamic.

If this viewpoint is correct, as we believe it is, it would furnish a rational basis for the employment of these potent agents derived from the thyroid and, with the exception of the well defined hypothyroid states, avoid the confusionism produced by assuming more or less imaginary roles played by the thyroid in acute and chronic diseases, simply because the administration of thyroid substance in more or less appropriate doses has shown remarkable effects. These effects hardly allow us to speak of latent hypothyroidism or forme-fruste of thyroid insufficiency, associated with this or that disease, simply because the administration of thyroid substance has been of benefit, no more than we would speak of hypostrichninism or hypodigitalism, simply because the administration of these two agents is so strikingly beneficient in certain conditions.

However, these remarks should not be interpreted to mean that there is no foundation, in fact, in the endocrine interpretation of glandular function related to clinical syndromes. The pharmacologic interpretation of the physiolog-

ical action produced by the administration of the desiccated gland or active principles extracted therefrom, opens up valuable therapeutic possibilities and incidentally will give some real help in the elucidation of the intricate problems of endocrinology.

Specifity of Thyroid Physiological Action

The evidence at hand makes it impossible to entertain the doubt that pharmacodynamic phenomena observed after tyroid feeding are due to the organically combined iodine and not to any specific products elaborated by the gland. There is distinct evidence that the phenomena observed are due to the action of the thyroid secretion, the role of the contained iodine being as yet in part obscure. C. Wegelin and J. Abelin (6) have shown that the question of the character and location of the physiologic activity of the human thyroid gland is yet unsettled. The authors have made experiments with thyroid glands by feeding them to tadpoles. (*Rana temporaria and Rana esculenta.*) The glands were given to the tadpoles partly in fresh, finely chopped form, and partly in dried form. In the experiments the following were used: thyroid glands of new-born children, normal glands of children and adults, struma diffusa, struma nodosa and Basedow's struma.

A typical and quick effect was observed in the tadpoles which had been fed with normal thyroid glands. This effect was equal to that of thyroid tablets. The iodin-free and colloid-free thyroid glands of new born children did not produce any physiological activity in the tadpoles. At the same time it was observed that the presence even of the smallest quantity of iodin was sufficient to produce a typical effect. The experiment with struma diffusa showed that the physiological activity does not always go parallel with the colloid content of the thyroid gland. Neither does the character of the colloid have any great influence on the activity. The authors, therefore, claim that neither the quantity nor the character of the colloid has very great influence on the biological activity of the thyroid glands, as even a great quantity of colloid does not produce a strong effect.

An interesting feature was observed in the experiments with struma nodosa; the knots of the struma produced a biological effect, which the normal thyroid glands did not produce. The authors think this is a positive proof of the possibility of producing a biologically active substance from the epithelium of the adenoma.

The experiments with Basedow's goiter produced a quick and very typical effect, in spite of the fact that the colloid content of the goiter was very small. The iodin content of the Basedow's goiter was also comparatively small.

A. T. Cameron and F. A. Sedziak (7) have also observed that hypertrophy of lymphoid tissue as well as the hypertrophy of other organs follows the administration of thyroid to adult white rats. Accordingly from March 4 to March 22 a daily dose of thyroid in the ratio of 1:5.000 of actual body weight was fed to each of seven rats, other rats being used as controls. All of the animals were fed unlimited quantities of bread and milk. At the end of eighteen days the rats were killed and the organs were dissected and weighed. The tabulated results show that even in adult rats the administration of thyroid produces a distinct retardation of growth. While the treated rats show a loss of weight, the controls show a slight gain. *Nevertheless while the weight of most of the treated animals was lower, the weight of the kidneys, heart, spleen, lymph glands and adrenals was actually greater in the treated animals.*

An important contribution to the pro-

tective action of the thyroid is quite distinctly established by the work of Masataro Miura (8). The protective action of the thyroid is not a function of the iodin content alone, *for potassium iodid or di-iodotyrosin, given by mouth, does not protect mice from poisoning with acetonitril.* Thyroids vary in their ability to afford resistance to acetonitril poisoning, the fetal glands being the least effective in this respect. Thyroxin, in very small doses, may be as potent as the most active thyroid. In large doses it not only lowers the resistance of the animal to acetonitril, but also causes a loss in weight. This variance in the thyroids is not due to the iodin content, nor to a species difference for the beef thyroids used different among themselves.

Experiments proved that when Thyroxin was fed in one-third the amount of the most active thyroid preparation used, based upon the iodin content, the protection against acetonitril was greater than that afforded by thyroid. This would indicate that the A iodin in the thyroid (one-half of all the iodin, insoluble in acid, curing myxedema and cretinism and from which thyroxin was isolated) is concerned in the production of resistance to acetonitril, and that the thyroxin obtained from this fraction contains a protective substance in high concentration.

The results of the experiments demonstrated: 1) desiccated thyroid fed to mice protects them against poisoning with acetonitril. The thyroid seems to be efficient in proportion to the amount of iodin contained. 2) Potassium iodid and di-iodotyrosin gave no protection against acetonitril, no matter what quantity was used. 3) Thyroxin, when fed in such amounts that it furnished one-third of the iodin provided by the most active thyroid fed, afforded a higher degree of protection in some cases. Increasing the amount of the thyroxin decreased the protection against acetonitril and caused loss of weight on the part of the animals.

These results show the dangers of high doses, as well as showing how detrimental to the constitution hyperthyroidism is, how delicate is the functional equilibrium of thyroid function.

The views of the chemistry of the active principles of the thyroid are interestingly expressed by Edward C. Kendall (9), the discoverer of Thyroxin. He states that the entire physiologic activity of the thyroid is due to no other substance in the gland than thyroxin. A single injection will continue to exert a physiologic effect for 5-6 weeks, as has been determined in myxedematous patients. Of all the ductless glands the thyroid produces the most marked physiologic response for two reasons, 1) duration of function and 2) stability of the molecule of the active constituents of the thyroid. The amount of thyroxin required daily is about 1/20 gr. of the pure crystalline product administered intravenously. A larger dose results in a toxic condition similar to the syndrome of nonexophthalmic goiter. A single large dose may produce almost no effect, because it is excreted with the bile from the liver before it can act; it is the continued administration of small amounts that produces toxic symptoms.

Reid Hunt (10) summarizes the pharmacodynamic action as follows: Thyroid substance has an almost unique position among drugs, since the only definite indication for its use is to supply a deficiency of the body, and when such is met, the administration of additional amounts of the substances produces effects which can only be termed toxic. The effects produced by its administration in many conditions (such as most cases of obesity and delayed growth in children) which are not due to deficient action of the patient's thyroid gland, are

toxic rather than physiologic. The most easily measured effect of thyroid when administered to a normal person or to one suffering from a condition of hypothyroidism is an increase in the oxidation of the body. This effect seems to be obtained more constantly and in a more quantitative manner, in individuals with myxedema and in cretins, than in normal individuals. In the latter the action of the administered thyroid is apparently modified in various ways by the activity of the subject's thyroid gland. When Thyroid substance is administered in repeated doses to normal animals or men, there is a latent period, then a tendency for a positive nitrogen balance to diminish and then to become negative; there is an increased excretion of water, chlorids, sulphates, phosphates, urea, ammonia and purins; a markedly increased output of carbon dioxid; a diminution or disappearace of the glycogen of the liver; a diminished sugar tolerance and perhaps glycosuria; a loss of weight, chiefly due to loss of water; frequently a rise of temperature, sweating, weakness, headache and sometimes nausea, irritability, restlessness, muscle tremors and twitchings, palpitation, tachycardia, precordial pain and attacks suggesting angina pectoris. When thyroid substance is administered in proper doses to patients with myxedema, there is a return of the basal metabolism rate to normal and a disappearance of the symptoms. The effect of thyroid administered to such individuals disappears slowly.

The mode of action of thyroid is obscure. Its action is not known to be modified by the simultaneous administration of other glands of internal secretion or of other drugs. *The role of iodin in thyroid is not known,* but all preparations of the gland that have a demonstrable "thyroid" action *contain iodin. No iodin compounds other than those derived from the thyroid gland have been found to have a distinct* "thyroid" action. The remarkably uniform manner in which the metabolism of a patient with myxedema may be maintained for long periods on the previously determined dose of the official preparations. The U. S. P. thyroid is very stable; preparations 12 years old have shown undiminished activity by both physiologic and clinical tests. Concerning the relative therapeutic efficiency of thyroxin and thyroid, Plummer (11) states that a daily oral dose of 1.6 mg thyroxin will hold the basal metabolism of most persons deficient in thyroid within normal limits, while Sturgis (12) reports that, in order to keep the metabolism at a normal level the average required amount (of U. S. P. preparation of thyroid gland) for a patient with complete myxedema is 0.13 gm twice daily. Thyroxin on this basis shows an activity of about 240 times that of thyroid substance.

Clinical Application of the Pharmacology of Thyroid Secretion

It is apparent that we can avail ourselves of the distinct physiological effects of thyroid substance or thyroxin on the basis of the pharmacological action: (1) to increase oxidation in all the clinical states, exhibiting phenomena of suboxidation, evidenced by sub-normal temperature, slow pulse, obesity, arthritic manifestations, migraine, etc.; (2) increase the kidney function by its ability to stimulate the excretion of all constituents of the urine; (3) to counteract the autotoxic states following the convalescence of all acute infectious diseases due to the accumulation of autolytic and metabolic products which can be rendered inocous by rapid oxidation, in other words, whenever it is necessary to increase the metabolic rate.

The toxic effects of thyroid secretion continued over a period of time will

cause necrotic changes in the heart muscle. Coincident with the tachycardia induced with the tremendous increase of myocardial work such as is noted in hyperthyroidism (Graves-Basedow disease) it shows in a convincing manner that Surgery still remains the most dependable remedy in these conditions.

If the pharmacodynamic study of thyroid secretion teaches us no other lesson than that of the pathological lesions engendered by the excessive kinetic drive of the metabolism with its attendant deleterious effects on the cardio-vascular system, and on the heart muscle per se, making clear the unequalled service of timely surgery, we would be amply rewarded for our labors.

It is obvious that employment of the thyroid extract on pharmacologic indications will lead to the elucidation of the association of hypothyroidism, with many pathological states, it will help to demonstrate that an increased thyroid function is desirable for the effective treatment of certain clinical syndromes. Interpreted in this sense the use of endocrine products will be placed on a rational basis and become of inestimable value, both to the art of therapeutics and science of physiology.

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Goiter In Utah*

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Since Utah is a new state and its population only in the third generation, it is possible to make some interesting comparisons with reference to the development of goiter.

The pioneers settled Utah in 1847, most of them coming from Missouri, and later some came from Texas and England. All of these countries are relatively non-mountainous, and the incidence of goiter is low. Therefore, the first generation of Utah was practically goiter gree. It was in the second generation that goiter commenced to appear, and now in the third generation the incidence of goiter is high, together with some cretins.

Now, the interesting thing is, why did a goiter-free people develop goiter in its offspring while living in Utah? Utah is a mountainous country composed of large mountain ranges, among which are situated smooth valleys where its people live. In other words, the people of Utah live in the valleys of the mountains, and their water supply is of two sources, spring water from the mountains and well water from the valleys.

*Read before the American Association for the Study of Goiter at Atlantic City, May, 1925.

When the pioneers came to Utah, they settled in the valleys and used well water. As years went by and the population increased, it spread toward the mountains. The mining industry also influenced this movement. As cities grew and a city water-works became necessary, the logical thing seemed to be to pipe this fresh, clear, sparkling water, that rushed over the cliffs and down the mountain side, to the city for domestic and city purposes. Thus, the old wells of the pioneers were abandoned and mountain water took their place.

Now, this is what followed. In the cities where goiter incidence was practically nil, goiter commenced to appear. St. George, Utah, a town of about 2,500 population, had practically no goiter until fourteen years ago, when they piped spring water from Pine Valley Mountain for culinary purposes, and now a high incidence of goiter has developed. It is interesting to make a comparison between St. George in southern Utah with Brigham City in northern Utah. Brigham City has about the some population as St. George and has always gotten its water supply from a mountain stream. In a survey Nov. 19, 1924, by Dr. Heber J. Sears of the University of Utah, of 172 girls in the 7th and 8th grades of the Junior High School at Brigham City he found 73.6 per cent. with no enlargement of the thyroid. Only 73 of the girls showed any enlargement whatsoever, and most of these very slight. Only 7 in all could be said to approach even a moderate enlargement. These were under a doctor's care for treatment.

Why does St. George develop goiter and Brigham City does not, when both get their water supply from the mountain? The difference is this: At St. George the water enters the pipe line at the spring, while at Brigham City the water runs through a small valley, then down the canyon to the city. What, then, is the difference between the mountain water and the artesian well water in the valley? Analysis has shown that the percentage of iodine in the mountain water is low, while in the artesian well water it is present in moderate quantity. As the deep well water percolates through the soil, it takes up iodine. All of the towns supplied by artesian well water are practically non-goiterous, while towns in the same valley near the mountains are very goiterous.

During the past two years an intensive study and survey has been made of goiter in Utah, both by the extension division of the University of Utah and the State Board of Health.

Dr. Heber J. Sears of the University of Utah made a survey of the school children, ages 5 to 20 (5 to 12 grades, inclusive), of three counties in southern Utah, with the following result:

Kane County

Girls 170
Boys 153

Total 323

Thyroid enlargement among girls 70%.
Thyroid enlargement among boys 17%.

Degrees of enlargement:

	Girls	Boys
Slight enlargement	48.8%	58.8%
Moderate enlargement	15.%	2.6%
Marked enlargement	3.5%	.0%

Out of 209 goiterous children, 9, or 4.3% have slight adenomas.

Of the towns in this county, Ordeville was the highest: girls 95%, boys 78.9%. Glendale was the lowest, with girls 54.5% and boys 31.6%.

Millard County

Girls 604
Boys 541

Total 1145

Thyroid enlargement among girls 57.5%.

Thyroid enlargement among boys 43.8%.

Degrees of enlargement:

	Girls	Boys
Slight enlargement	90 %	94 %
Moderate enlargement	6.9 %	5.5%
Marked enlargement	.06%	.0%

Of the towns in this county, Scipio was the lowest, with girls 18% and boys 3%. Holden, in the same valley 10 miles away, had girls 72% and boys 60%. Oak City was the highest, girls 95%, boys 82.3%.

Out of 584 goiterous children, 19, or 3.3% had slight adenomas.

Washington County

Girls	621
Boys	526
Total	1147

Thyroid enlargement among girls 52%.
Thyroid enlargement among boys 32%.
4% adenomas.

According to this survey, about 4% of goiters among school children are adenomas. The percentage of goiter is higher in girls than boys.

This survey coincides very closely with the survey made by the State Board of Health except that the State Board of Health has just completed in May, 1925, a complete survey of all the school children in the state, a resume of which is as follows: The State-wide goiter survey made under the direction of the State Board of Health by Dr. James Wallace, state epidemologist, has been completed. School children in every county in the state except Doggett have been examined for enlargements or unusual conditions of the thyroid gland. Doggett has only about 120 school children all told.

While it was impossible to examine every child of school age in the state, the examinations have been extended to 109,910 such school children, or five children of school age out of every six found by school censuses.

It is a record which has never been equalled, so far as is known, locally, in any state or any one given area, either as to numbers or as to thoroughness. Outside of Salt Lake City, where several cooperated, the work was done for the most part by the one examining physician, Dr. Wallace, and in practically every case, in his presence, as he might be assisted by local physicians. There were 54,848 boys examined, and of these 17,523, or 32%, were found to have goiterous conditions. There were 55,062 girls examined, and of these 29,980, or 54.5%, showed goiter, usually the common or endemic form. The examinations show that 43.2% of the school children of the state, including both sexes, have goiterous conditions.

Of special interest to Dr. Wallace was the opportunity to examine the children attending the Indian school at White Rocks, Uintah county. Of 39 Indian boys examined, fifteen, or 38.4%, showed goiter; while of 43 Indian girls, 11, or 25.6%, were found to be positive. This indicates that it might be of interest to learn if the Indian boy is as susceptible to goiter as the Indian girl. This is not the case with white children.

Of those found positive, it would seem that 16% belong to the pregoiterous group; about 18% to the slight; 2% to the moderate and less than 1% to the great. In the highest age group (20 or over) a greater percentage of moderate and great enlargements were found. The number of moderate and great enlargements found in males as compared with females just about corresponds to the ratio of positives for the two sexes. The difference in incidence between boys and girls is not great in the lower age groups being only about 2.3, but in the higher age groups the difference is more marked, being usually about 1.3. In very intensive areas the prevalence among males is about equal to that among females, but where the conditions

which produce goiter are not well marked there is a greater relative preponderance of females, the female seemingly being more susceptible to slight goiter producing conditions. The number of toxic goiters is less than 1%.

According to school districts the survey showed Emery county to have the largest number of positives, the percentage being 83.5, while Gromtet District, in Salt Lake County, was the lowest, with a percentage of 26.5.

TREATMENT

At Akron, Ohio, where there was much goiter, school children were given iodine treatment, 3 grs. sodium iodine per day for 14 days twice a year from 1916 to 1920, and not one normal girl who took the treatment developed goiter, while of those who did not take the treatment, 27.6% developed goiter. And of those who had goiter and took the treatment, in 60% the goiter disappeared. In Zurich, Switzerland, where an examination showed 87.6% of children had goiter in 4 years, by iodine treatment the percentage was reduced to 13.1%.

In Utah at the present time, as a prophylactic treatment, all of the school children are given 10 mgs. of iodine in chocolate-coated tablets once a week throughout the school year. It is estimated that if this treatment is carried out for ten years there will be no goiter in Utah.

The Toxic Goiters of the Adolescent Age*

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Goiter is more prevalent during the adolescent age than at any other age during life. In a partial survey made in the public schools in Portland it would seem that approximately 60% of the girls and 30% of the boys have a goiter during this period. In the Goiter Clinic of the University of Oregon Medical School, we use the following classifications of adolescent goiter:

I—Simple goiter
- A. Colloid
- B. Hyperplastic
  1. Diffuse
  2. Localized

II—Toxic Goiter
- A. Toxic hyperplastic adolescent
  1. Diffuse
  2. Localized
- B. Toxic hyperplastic (exophthalmic)
- C. Toxic adenomas.

III—Tumors
- A. Adenoma
- B. Sarcoma.

We have seen none of the other varieties of goiter in the adolescent age.

An understanding of the various types of adolescent goiters necessitates a brief review of the anatomy and physiology.

Anatomy: The thyroid gland is made up of acini supported by a thin interstitial structure containing connective tissue blood vessels, lymph channels, in-

*Read before the American Association for the Study of Goiter at Atlantic City, May, 1925.

terstitial cells of Wolfler, and nerves. The acini differ from the acini of other glands in two essentials, first, they have no ducts through which to discharge their secretion, and second, they are normally distended with a homogenous material, colloid.

Physiology: The cells lining the acini secrete two substances, first, the active principle termed by Kendall, thyroxin, a substance probably needed by every cell in the body and the secretion of which may be measured in terms of heat output or oxygen consumption; second, the colloid, an inert, homogenous substance, the purpose of which is to hold the thyroxin in suspension until needed.

Due to the rapid changes incident to the adolescent period there is an increase in the demand thrown upon the thyroid gland as well as upon the other important organs of the body. Owing to an iodine deficiency in the food and water intake in many sections of the world, and probably also to a variability, first, in the absorption of iodine from the intestinal tract, and second, in its utilization by the thyroid, the thyroid which previous to the adolescent period was able to meet the demand placed upon it now becomes deficient. This deficiency is ordinarily manifest in one of two ways, (1) by an over-secretion of colloid, in the attempt to secrete a sufficient amount of thyroxin. This results in a distention of the acini increasing the size of the gland and is known as colloid goiter; and (2) by an increase in the size and number of the epithelial cells in order that there may be a greater secretion of thyroxin. This condition we call the hyperplastic goiter of the adolescent age. It does not differ greatly in the gross or microscopic appearance from the hyperplastic goiter of the adult, except that frequently there are localized areas of hyperplasia simulating an adenoma but differing from it, in that it has no capsule and microscopically it resembles the hyperplastic type of goiter and not the adenomatous type in which there is an increase in the number of acini. The former condition we designate as diffuse hyperplastic adolescent goiter and the latter localized hyperplastic adolescent goiter.

While in the majority of the cases of adolescent hyperplastic goiter there is no evidence of hyperthyroidism, in many there is such evidence. Pathologically these cases do not differ from the nontoxic hyperplastic adolescent goiter, but they must be grouped separately because of the clinical manifestations.

Colloid goiter is the most frequent type of goiter occurring in the adolescent age. Other than the presence of the goiter there are no symptoms. It is easily preventable by the administration of iodine and easily curable by the judicious use of desiccated thyroid. It has been our experience that iodine is of great prophylactic value, but of almost no curative value. This statement is based upon a series of cases studied over a period of from six months to two years in which the patients were seen at intervals of two weeks, the neck measured, the pulse counted, and the general physical condition observed.

The remainder of this paper is based upon a study made by Dr. Peden, for his senior surgical thesis. One hundred and seven consecutive cases of adolescent goiter were studied. Of this group fifteen were classified as toxic hyperplastic adolescent goiters, one as toxic adenoma and two as toxic hyperplastic goiter (exophthalmic).

As the material for this study comes largely through patients sent to the clinic by nurses or brought by anxious parents, this group of cases must not be considered as a representative group of patients with adolescent goiter. Toxic goiter does not exist in such percentage as is found

in this group. These are the patients who have come for treatment, many of them being sent by the school nurses, because they have symptoms of hyperthyroidism, while the patients without such symptoms are, for the most part, going without treatment.

The simple diffuse hyperplastic adolescent goiter shows no symptoms or signs other than the enlargement of the thyroid gland. The gland is moderately enlarged, is fairly firm in consistency, being firmer than the colloid goiter, except when the latter develops rapidly. The upper poles are usually fairly sharp.

The simple localized hyperplastic adolescent goiter differs from the diffuse hyperplastic type in that while there is usually some increase in firmness of the gland there are definite nodules. These nodules simulate adenomata, but differ from them in not being as definite, and disappearing under proper treatment. That this condition exists as a definite pathological entity we are certain because of an error in diagnosis a few years ago, resulting in the removal of such a nodule. Since that time we have studied the patients of this age with nodular necks carefully. While we have seen a few adenomas, the majority of them have been of the localized hyperplastic type of goiter, as proven by the complete disappearance with desiccated thyroid. Adenomas will decrease in size under desiccated thyroid if there is a considerable amount of colloid within the adenoma. The tumor does not, however, completely disappear. In fact, in many cases while there is a decrease in the size of the adenoma, the tumor is even more perceptible because of a corresponding decrease in the size of the thyroid gland due to a reduction of its colloid content under desiccated thyroid.

The toxic hyperplastic goiters of both the diffuse and localized varieties do not differ from the simple hyperplastic adolescent goiters pathologically. Clinically, however, the former group presents definite manifestations while the latter group has no symptoms derived from hyperthyroid function. The toxic symptoms of the former are transitory. At times the patients are perfectly normal except for the thyroid enlargement, at other times they complain of tachycardia, palpitation, nervousness, tiring easily, and often there is some difficulty in concentration upon their school work. During these times the appetite may be variable. The patients sometimes lose in weight. The pulse is rapid, tremor present, and the blood pressure usually below the average. The basal metabolic rate is increased during the period of hyperthyroidism. In the fifteen patients belonging to this group the highest rate was plus 54.7. There was one rate of plus 44.8, another of plus 43, another of plus 40, two of plus 34, one of plus 30, four between plus 20-30, and the rest plus 20 or below. Usually the rate remains up for a comparatively short time if the patients' activity can be controlled. The giving of desiccated thyroid while the rate is up increases the rate, but after the basal metabolic rate has returned to normal the giving of desiccated thyroid carefully controlled usually does not increase the rate, nor cause a return of symptoms, but results in the diminishing of the size of the gland. There is no apparent difference between the diffuse hyperplasia and the localized hyperplasia, clinically or in the relationship to treatment. The following case history serves as an illustration of this type of toxic goiter.

Patient, female, aged 14. Chief complaint: Goiter, nervousness, sweating, palpitation, nausea, loss of appetitee, sense of pressure in the neck.

Previous illnesses: Measles, whooping cough, scarlet fever, influenza.

Family history: Negative.

Present illness: First noticed goiter about four months before seen.

Physical examination: Fairly well nourished girl, pulse 112, and regular. Eyes react to light and accommodation, with no evidence of exophthalmus. Tonsils have been removed. Neck, cervical glands palpable both sides. Thyroid: Diffuse enlargement of both lobes and the isthmus, with a nodule about 2.5 cms. in diameter in the right lobe. Lungs: Negative. Heart: Negative. Abdomen: Negative. No tremor. Skin: Moist. The basal metabolic rate at the time of the examination was plus 34. No treatment was given at this time. The patient advised to reduce activities to the minimum and permitted to continue attending school. Basal metabolic rate two months later plus 12%. Four months later plus 8%, one week after former at time of menstruation plus 15%, nine and a half months after first seen plus 5%, and eleven months after first observation patient returned to clinic for observation, at which time the thyroid gland was found to be normal.

Diagnosis: Alodescent hyperplastic goiter with localized nodule, transitorily toxic when first seen.

Results: Cured, providing patient continues to take preventive dose of iodine.

Adenoma: In this series of cases, only one toxic adenoma was found. There have, however, been more adenomas seen in the clinic during the adolescent age, and have for the most part been non-toxic. The one in this series serves as an illustration of the toxic adenomata.

Patient: Female, aged 14. Chief complaint: Goiter, nervousness, tachycardia, palpitation.

Family history: Mother operated on in this clinic for toxic adenoma.

Present illness: The goiter was first noticed at the age of 11. There had been a history of symptoms suggestive of hyperthyroidism since the age of 10. At the present time she is nervous, sweats easily, faints frequently, tires easily, appetite is good, is nauseated and vomits occasionally, has tachycardia and palpitation frequently.

Physical examination: Somewhat slender, fair height, undernourished. The thyroid diffusely enlarged, with a definite palpable nodule in the lower right lobe. Tremor present. No abnormal eye signs. Basal metabolic rate January 5, 1923, plus 37, February 27, 1923, plus 62, March 2, 1923, plus 10%, May 26, 1923, plus 42.

Diagnosis: Toxic adenoma.

Treatment: Patient was operated upon August 1, 1923, when a definite encapsulated nodule was found and removed, following which the patient made an uneventfull recovery, and since which time has been practically normal.

Exophthalmic Goiter: In two patients a diagnosis of exophthalmic goiter was made. While exophthalmic goiter in the adolescent age is uncommon, we have seen it in private practice as early as 8 years of age.

In this group there were no tumors other than the adenoma. In private practime, however, a sarcoma has been seen during the adolescent period.

Treatment: The treatment of the toxic goiter of the adolescent age, like the non-toxic, is primarily prophylactic, in none of the patients seen presenting the evidence of toxic goiter was there a history of taking iodine in prophylactic doses, before the development of the goiter. Some of them had taken iodine after the development of goiter, and the symptoms, we believe, are in some way directly traceable to the effect of the iodine. We believe that had the patients been given iodine from early childhood the probabilities are there would have been no goiter to have become toxic.

The treatment of the non toxic goiter: Non toxic goiters are treated in our clinic with desiccated thyroid. We begin with one grain three times daily. The patients are required to report at intervals of two weeks for observation. Patients not yielding to one grain three times a day and not showing any evidence of hyperthyroidism are given more. The majority of the patients are cured within three months. When the gland returns to normal the patients are put on one grain of desiccated thyroid daily for one month, and then given either a grain of sodium iodide once a week or an iodostarine tablet once a week, or advised to use the iodized salt, and instructed to report back to the clinic every six months.

While it is too early to draw final conclusions, up to the present we have seen very few recurrences in the cases thus treated and pronounced cured. There are a few cases diagnosed as simple hyperplastic adolescent goiters that have

become toxic when given desiccated thyroid, but they have all cleared up when it was discontinued. The toxic hyperplastic adolescent goiters are treated according to the intensity of the symptoms. The more severe cases are put at rest in bed. The milder cases have their activities limited and for the most part permitted to attend school. In this way the majority of them become non-toxic, they are then put on small doses of desiccated thyroid, which we find does not cause a return of symptoms if carefully controlled, The thyroid gland decreases in size, and upon its returning to normal the patients are put upon iodine as a preventive measure.

The toxic hyperplastic exophthalmic goiter should be operated upon in the adolescent the same as in the adult. The same care should be used in preparing the patient and the same type of operation should be followed. With proper preoperative care and with preliminary ligations where indicated, these patients respond well to operative procedure.

While the majority of the adenomas seem in the adolescent age are not toxic, we believe that all adenomas become toxic in the course of time, and therefore advise their removal.

Conclusion: Toxic goiter exists in the adolescent age in three forms, (1) Toxic hyperplastic adolescent goiter, which exists both as the diffuse and localized varieties; (2) Adenoma; (3) Toxic hyperplastic exophthalmic goiter. The former is the most common and if properly treated does not require operation. If improperly treated permanent hyperplastic goiter may develop.

Adenoma and toxic hyperplastic exophthalmic goiter are not common but do occur and require surgical procedure.

Exophthalmic Goiter Before and After Operation*

Charles Calvin Tiffin, M. D., Seattle, Wash.

It is not the intention of the author of this paper to enter into the question of the differentiation and classification of the different types of goiter.

Most clinicians feel that we have reached a fairly good understanding as to what type of case is considered to be an Exophthalmic Goiter, we can separate it from the Toxic Adenoma, and we recognize the mixed type.

Whether the typical or well marked case of Exophthalmic Goiter is one type only or whether we have more than one type remains to be proved.

The clinical value of iodine therapy in Exophthalmic Goiter has received and is still receiving its full measure of consideration. The sensational results in many cases is one of the most important steps in scientific advance during the last five years. No explanation is offered that is entirely satisfactory as regarding its failure in many other apparently clear-cut types of Exophthalmic Goiter.

Within the last eighteen months I have focused my attention on this particular phase in the study of goiter, and am gradually becoming convinced that we have more than one type of Exophthalmic Goiter using iodine. We find most cases much improved, others with no improvement and in a certain number of patients there is a definite exacer-

*Read before the American Association for the Study of Goiter at Atlantic City, May, 1925.

bation of symptoms. On scrutinizing these cases more closely I have found that one can almost anticipate the type of case in which iodine will give its most sensational results. These cases are those where the patient is developing the first crisis. Younger patients with their first symptoms of Exophthalmic Goiter seem to respond better than the patient who has had the condition longer.

Many of us are given to the habit of accepting certain standards and set rules for the handling of the world's problems, whether in science, art, business or religion we find this same tendency. That is, permitting the scientific investigator here and there to pay in time, energy and application for the usable knowledge that the world demands. As an illustration of this, the use of iodine in the treatment of Exophthalmic Goiter is a striking one. With this, there is already a tendency to become empirical in our treatment of Exophthalmic Goiter. This leads us to our individual viewpoint in the practice of medicine. The internist sees the medical side of the case often to the exclusion of the surgical aspect. If we are surgeons we see the surgical phase to the exclusion of the medical, but what one must realize is that it is both medical and surgical and neither is successful without the other.

Great credit should be given any man for constructive thinking, but we should all be cautious about drawing hasty conclusions, especially in medicine, which may be based on our own personal ability to see one side more clearly than the other. From personal experience I know a number of excellent men who are treating Exophthalmic Goiter today entirely on the theory that it is a medical disease, but it is true, almost without exception, these men are not surgeons. Then, on the other hand, there are surgeons who have not realized that this disease is medical as well as surgical. We must not rush into these cases from a surgical standpoint believing that the operation is the one and all-important thing. There are many prominent surgeons today who are doing first-class work but who still confuse the Toxic Adenoma and the Exophthalmic Goiter. When one confuses these two conditions it is readily appreciated that the one confusing them will not appreciate the use of iodine and certain other precautionary measures to be exercised in Exophthalmic Goiter, for what is good for one only agitates and makes worse the other condition, as we well know. When a case of Exophthalmic Goiter comes to us for treatment there is actually an understanding between the patient and physician but more particularly on the part of the patient, that the patient is going to secure relief or cure but more especially cure, not that we actually promise in words certain things that we cannot fulfill, yet the very fact that we proceed to prescribe and treat these cases medically and surgically emphasizes to the lay mind that we know what we are doing and that we are going to cure him. The patient is seeking the way out, he has come for help. To suggest a certain line of treatment without certain information being given to the patient is neither morally nor economically right—it is a serious mistake—the remedy is to understand first, then explain to the patient that Exophthalmic Goiter requires medical treatment at all times, at least continual medical supervision over a long period of time, that there will come a time very soon at which you will be able to operate upon him, but that, due to the peculiarities of the disease, the operation in itself will not terminate the medical supervision or the necessity of his physician's advice. As an illustration of our errors in this regard, let us hear one of the common statements: "Mrs. Jones

had Exophthalmic Goiter for years and she refused operation until it was too late." Again, "Dr. A operated on Mrs. Brown for Exophthalmic Goiter but she is just about as bad as ever, as he did not take out enough of the goiter." In the first instance, we have a patient who, for some reason or another received purely medical treatment, in the second instance we find a case which evidently has had surgical treatment, but the patient and the friends either do not understand that operation is not the finale, or else the surgery has possibly not been as carefully done as it should have been. The remedy for this is that we let our patient know what we are trying to do, let us not leave it to the lay mind to understand all that is going on in our minds as we care for the case. The patient must understand enough to at least have confidence in what we are trying to do for him.

It is not my intention to mention the technic or to emphasize any particular technic in this paper, but in passing would like to suggest that the most perfect results following thyroidectomy occur in those cases where the minimum of thyroid tissue has been allowed to remain. Sloan reports over 140 cases in which he has removed at secondary operations the entire thyroid gland, and it should be emphasized to the patient that possibly not as much of the gland will be removed at the operation as will eventually have to be removed because no surgeon can anticipate in every case just how far he will carry the operation. In other words, lobectomy may be the operation, as that may be felt the only safe thing to do. Explain to the patient, then, that if more surgery is necessary for any reason whatsoever, all will be satisfactory and the patient will cooperate. Before operation in a classical case of Exophthalmic Goiter a very high pulse pressure will be found, following operation this will drop after three or four days, and it will drop in proportion to the improvement. The sweating and temperature and many of the other evidences of Exophthalmic Goiter suggest infection as an important association of this condition and it has not been settled yet as to whether the use of iodine in these cases furnishes a direct requirement of normal metabolism or whether the iodine has the direct effect on the infection—this is an important point which can only be cleared up when more is known of the endocrine system. Plummer has introduced the idea that we have in Exophthalmic Goiter an abnormal secretion of the thyroid gland, both abnormal in quality and quantity. I believe that close observation of these cases emphasizes the idea that it is an abnormal quality and that the quantity may or may not be increased.

Considering the time for operation one must study carefully the weight curve, the digestive system and the vascular system, these particularly. Acidosis and function of the kidneys need consideration. When there is extreme loss of weight, the patient is losing weight and there is an irregular pulse varying in its rate and regularity under the slightest mental or physical stimulation associated with oedema and a varying pulse pressure which is often high, the case is not yet ready for surgery, unless very judiciously attempted in a small way. At this stage of the disease preceding operation it is, I believe, the duty of the surgeon to share the responsibility with the internist. It is not the best practice in my opinion for a surgeon to see a case just once or twice before an operation, for the important thing is not always what you find on one or two examinations, but rather what is the patient doing from day to day. However, when surgery becomes a part of the picture, the case is still medical. There is a tendency on the part of those of us doing thyroid sur-

gery to accept cases referred from other physicians with a statement from the physician that the patient is ready for operation. The question of surgery is too important for us to accept this without further investigation. We owe too much to the patient and science, including ourselves, to overlook anything that will increase the patient's potential resources. We must not forget that the crisis, so called, which may follow any thyroid surgery gives us an added responsibility over general surgery. Having taken our patient to the operating room, we have reached a period in the patient's history and in the surgeon's experience where one hour's work may destroy or perpetuate all that we have done. Here is one place where the paramount thing in surgery is in evidence, surgical judgment. It is true the operating hour has been set, the patient and his friends and all concerned have prepared themselves for this—the operation may even be starting, then something in the patient's condition tells you that you will be unable to safely complete the operation. Whenever this time occurs, it is much better to return the patient to bed for further consideration and possible future surgery, than to regret that you carried through the operation.

The patient and the family and all others who are interested should have this possible contingency explained to them before operation, more particularly the patient's friends. During operation careful supervision should be carried out by some physician who is thoroughly familiar with the case and who is not assisting in the operation.

Having completed the operation you enter the third stage in the treatment of Exophthalmic Goiter, your success in handling these cases after operation will depend upon the way you have educated your patient and the patient's friends. You will still find use for iodine from time to time, for you have a patient who has passed through a serious illness, whose heart and vital organs have been damaged, whose nervous system has been severely strained, you will need patience, philosophy, psychology and perseverance. If you follow out some such line of treatment as suggested, life will be conserved, science elevated and both medicine and surgery will get their proper credit.

Value of Blood Settling Time in Goiter*

By Joseph L. DeCourcy, M.D., DeCourcy Clinic, Cincinnati, Ohio

Clinically, toxic goiter is readily differentiated from non-toxic goiter in a large percentage of cases. Tremor, profuse perspiration, loss of weight, etc., are readily discernible. In borderline cases, however, the diagnosis is not so easily made. Difficulty is also encountered at times in differentiating toxic goiters or specific hyperthyroidism from other pathological states, as incipient lung tuberculosis, psycho-asthenia, reflex nervousness of female origin, or prostatic congestion in the male. Any method therefore, which aids us in clarifying these conditions, should be a welcome adjunct to medicine.

In the past, basal metabolism has been our chief reliance. Unless accu-

*Read before the American Association for the Study of Goiter at its annual meeting, Bloomington, Illinois, January 30, 1925.

rately executed however, this test becomes of relatively little value. Again it is a test of the clinic and not applicable to all practicing physicians, therefore, we have endeavored to present a simple method which we believe will increase in valuation as our experience widens.

Fahraens in 1916 introduced to the medical world, the importance of blood settling time in differentiating normal from abnormal conditions. His work was done mostly in the examination of blood in pregnancy. In 1920 Linzenmeier found that a substance which he called agglutin, an electro-positive body, and fibrogen of the blood cause different sedimentation. Hoeber thinks that in every fast sedimentation of the blood a change in plasma is present, because some parts of the albumen disappear and globulin is present, because some parts of the albumen disappear and globulin is increased. But Musa found that the amount of globulin of the blood is always between forty and fifty per cent and that the settlng time is independent of the amount of globulin present.

Since 1920 the literature on settling time has increased and on account of the variance of opinion, we decided to investigate this test in our clinic.

Technic: Five (5) small bottles, clean and dry, numbered from one to five, are always ready for use. Into each of these we place 0.5 c. c. of 5% Sodium Citrate solution; into this we add exactly 2 c. c. of venous blood. After shaking, the bottles are placed in an ice box. (Tests we made with the same blood, using one part for settling immediately after taking from the vein, and the other part after twenty-four hours, do not show a marked difference in settling time, but if kept for a longer time the sedimentation becomes slower with the length of time). The blood is then put into graduated pippets and the reading taken over a period of twelve (12) hours.

In our early work many errors in technic were found and corrected. In brief these may be tabulated as follows:

(a) *Temperature:* Making a different series of tests with the same blood; one in the ice box at six (6) degrees centigrade, one in room temperature at eighteen (18) degrees and one in the incubator at thirty-seven (37) degrees, we found only a small difference in sedimentation between the blood in the ice box and that at room temperature, but a great difference between the blood at room temperature and that in the incubator. In view of these tests we feel that the test is best made in a cool room temperature in the winter time and at ice box temperature in summer.

(b) *Deviation of Pippets:* Bercceller and Wastle claim that the length of the blood cord is important. They claim that in fast sedimentating blood, the speed is proportionately fast to the length of the cord, while this is not so in slow sedimentating blood. Our examinations agree with these tests, but it is impossible to discover any certain rules to be used regarding the length of the cord. Of greater importance is the verticle position of the tube, and I am of the impression that many using this kind of examination of blood for a short time only, make errors and become impatient on account of the contradictory results. It happened to us in our first tests before the frame was made to hold the tubes in a vertical position. Very small deviations of the pippets from the verticle position (less than 10 degrees) influence the speed of sedimentation, especially in the first hour.

(c) *Dilution:* Tests made with different dilutions showed that the speed of sedimentation is increased with the

increase of dilution, but I do not think that we make any error if we use good graduated syringes and pippets.

(d) *Difference of Sex and Age:* We selected seventy-two divinity students, first examining to rule out any organic diseases, and used these men as normal subjects, and found that the average settling time was; after one hour, 2 m.m.; after two hours, six m.m.; after three hours, eleven m.m.; and after twelve hours, thirty-eight m.m.

Twenty-two normal women selected (making observations in deaf and dumb institutions) found after first hour, five m.m.; after second hour, eleven m.m.; after third hour, eighteen m.m.; and after twelve hours, forty-five m.m.

Twelve normal children ranging from ages eight (8) to fourteen (14) showed slightly faster settling time than females, averaging first hour, seven m.m.; second hour, fourteen m.m.; third hour, twenty-three m.m. and twelve hours, eighteen m.m.

(e) *Eating:* Observations made on some patients at different times of day, before and after meals did not show a marked change in settling time.

(f) *Menstruation:* Menstruation makes a slight increase in twelve hour settling time running about sixty m.m.

Pathological States:

(a) *Non-Toxic Goiter:* In non-toxic goiter the blood settling time corresponds to the blood settling time in normal patients. This is true in adolescent, non-toxic colloids and non-toxic adenomas. The cases in which these tests were made not only clinically non-toxic, but the metabolism rate was also normal.

In cases where toxicity was present however, even though in a mild degree, the sedimentation was proportionately fast. I will be better able to show this with the slides.

In differentiation we found that the settling time in active tuberculosis was faster than in toxic goiter. This we consider as very important, as early cases of lung tuberculosis frequently resemble toxic goiter clinically.

This test is also very important in differentiating borderline cases of toxic from non-toxic states.

Whether the test is more sensitive than correct metabolism readings, we are not prepared to state at this time.

(b) *Pulmonary Tuberculosis:* This test was used first as an indicator for the slightest activity in pulmonary tuberculosis and it appears as though we have found an indicator more delicate than the temperature. The settling appears earlier than the temperature and disappears after the temperature is normal. We have controlled the activity of our TB patients entirely on this phenomen. We allowed no patient activity whose settling time was above 50 m.m. even if temperature had been normal for some time, and found that by doing this we did not get recurrence of symptoms. It was observed that TB patients whose settling time was fast and did not change after twelve weeks in bed, carried an unfavorable prognosis.

TB patients improving invariably show steadily decreasing settling time.

(c) *Pregnancy:* Forty-five cases observed at St. Joseph's Maternity Hospital average: First hour, ten m.m.; second hour, twenty-five m.m.; third hour, forty m.m.; twelfth hour, eight m.m. The value of this becomes apparent in diagnosis of pregnancy in the first month and differentiates pregnancy from myoma of the uterus.

Recently I operated a case, having made a diagnosis of myoma of the uterus. The appearance of the uterus was such that pregnancy could not be

ruled out and the abdomen was closed. The settling test made one month after showed normal settling after twelve hours of forty-five m.m. The case was operated and the myoma removed.

(d) *Carcinoma:* In cancer diagnosis, the blood settling test is of inferior value. The speed of sedimentation seems to be dependent upon the duration of the cancer and the type of carcinoma cells, whether they are fast moving or not. However, in most cases, we have a fast sedimentation, and sometimes when secondary infection was combined with the cancerous condition, a very fast sedimentation.

The sedimentation test is of greater value in question of operability of cancer. The faster the sedimentation, the worse the outlook.

CONCLUSIONS

In the blood settling test we have a very sensitive test, which when combined with other methods, becomes a very valuable aid to diagnosis, and an accurate check to prognosis. It is especially valuable in differentiation between toxic and non-toxic states in goiter, toxic goiter and tuberculosis, pregnancy and myoma. It is exceedingly simple and can be made in any office, and it is not at all improbable that with continued application and study, its scope will be materially widened.

Overcrowding Facilitates Spread of Social Diseases

The National Anti-Slum League of Paris in its recent report states that overcrowding is rampant in certain sections of that city and that it may be viewed as the cause of social disintegration and the moral downfall of the family. "The danger of promiscuity, says the report, naturally occurs when parents and children sleep in the same room and elder and younger brothers —and very often brothers and sisters— sleep in the same bed.

The housing difficulties in Germany, according to an abstract in "Social Pathology"—issued by the United States Public Health Service, have much to do with the increase of venereal diseases, particularly among children. Due to overcrowding entire families have been infected, and a coincident laxity of moral standards has been found. One report states that a family of nine slept in one room, two married couples being among the number.

An editorial in "National Health," published in London, states that "We are not likely to attain a full measure of success in the control of venereal disease until we have arrived at a solution of the housing difficulty."

But the incubators of lewdness and its frequent associates—gonorrhea and syphilis —are by no means limited to the lower strata of society. Promiscuity is very diffusible, and one of the most essential as well as productive measures for health-maintenance is the effort to combat venereal diseases by both mental and physical hygiene. The two leading British Societies for the prevention of these diseases are now in accord as to the efficacy of personal cleanliness and disinfection in the prevention of venereal infection. Widespread education by publicity regarding the great scourge of venereal diseases as they affect the Child, the Family and the State, and the conditions influencing their spread and prevention is very productive of good results and is universally recognized as essential health work. The Washington Times, of June 26th, gives publicity editorially to "The Curse of Deafness," and points out the causative relation of syphilis to certain types of deafness.

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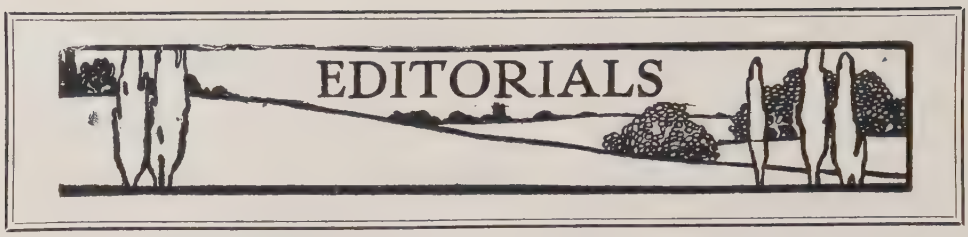


DR. JOHN E. RHODES

It is with deep regret that we chronicle the death of our old friend and colleague, Dr. John E. Rhodes, who died Sept. 2, 1925, in his 74th year. Dr. Rhodes was the highest type of a Christian gentleman, a splendid physician, a loyal, faithful and devoted friend. He did not possess a single enemy. Always courteous, pleasant, obliging, patient and considerate, he captured at once the heart of all those brought in contact with him. He was devotion itself to his family, his friends and to his patients. Dr. Rhodes was a highly cultured man, a thorough student, who kept abreast of the times, studied hard and was in the front line of his chosen specialty. His memory will live forever, and to his family he leaves a record of true nobility.

THE PHYSICIAN AND HIS FEE

We are pleased to see that such an influential publication as the "New York Times" publishes the following article on "How Doctors Get Paid" and feel that our readers will think it well worth reading:

HOW DOCTORS GET PAID

The evil of unpaid accounts, against which the business world has been making an organized campaign and through the agency of credit associations and other weapons has more or less successfully reduced its hazards of bad debts, is still an unsolved problem for physicians.

The general medical practitioner is the chief sufferer from this cause in the entire field of the profession, although in many cases he is the least able to spare the fees lost to him through the failure of patients to meet their obligations. Specialists, professors, and high-priced consultants occasionally find the collection of their accounts an arduous task, but in general they enjoy the prompt payment of their bills. Chiropractors and the followers of other special schools of medicine, it is understood, are practically entirely free from any worries on this point. Those who patronize them must generally pay in advance, and where this is not the case outstanding accounts are for the most part settled at the first of the month.

According to the estimates of various representative physicians, the average loss to the general practitioner is about one-third of his total accounts. This is the amount, it is asserted, which the average doctor forfeits owing to the disinclination of patients to pay their bills and to his inability to collect them successfully. Doctors as a rule are far from being business men, and pursuing a profession, as they do, involving long hours and often arduous work, their inclination to dun backward debtors is considerably less than would be the case with business men. Furthermore doctors are confronted by a condition which is foreign to the world of business, namely, a widespread belief on the part of a great portion of the public that unpaid doctor bills are not exactly a business obligation, but something in the nature of a suspense account, to be paid if they must, but to be left running as long as possible.

Credit associations and similar measures have done much to relieve the business man of losses arising from unpaid accounts. But although doctors have their medical associations, both county and State bodies, as well as a number of national organizations, they have never succeeded in utilizing them as a means of cutting down or preventing bad debts. It is pointed out that they could hardly undertake the same

steps as business has done, to investigate the credit rating of prospective customers and to check their financial standing, as when their services are called upon it is a wholly different matter from shipping a certain order of goods.

The business man first investigates a new customer and then when he has found everything satisfactory he proceeds to do business with him. The doctor, on the other hand, first treats his patient and then presents his bill, with little or no knowledge concerning the financial circumstances of his client. He can only hope that payment will be forthcoming, but according to what is considered a fairly reliable estimate, in one-third of his cases this hope will be a vain one.

Numbers of physicians, who have during years of practice lost hundreds and thousands of dollars, have adopted a more business-like attitude concerning their unpaid accounts. When bills which they have rendered are left unsettled and their patients give no indication of making payment, they turn over these accounts to collection agencies. In this way they are freed entirely from the worry and trouble of chasing after their fees. The collection agencies send out men, who visit the patient's home so frequently and so insistently that he is generally glad to settle up and be rid of his unwelcome visitors. The agencies, of course, take a good percentage of the amounts they succeed in collecting, but even so, many physicians find it profitable to receive only a portion of their fees rather than to lose them altogether.

GETTING A JURY

We Americans are very proud of ourselves, delight in calling ourselves a very practical, common-sense and peaceful nation. But we forget that in many things we have reached the super climax of human idiocy, especially so in our judiciary system, electing judges nominated by other politicians, our pardon system dominated by corrupt officials, our idiotic systems of expert medical testimony, pro or con as desired for money, and by no means least of all, our damnable method of selecting a jury. The American juror wished for must by necessity be illiterate, one who does not read the papers, cannot form an opinion —is, in short, an unmitigated ass.

In England, with its magnificent judiciary system a prospective juror is simply asked if he is related to or prejudiced against the defendant and if he can give judgment on the basis of the evidence which will be presented to him. That's all, and he takes his seat. In no case does it require more than an hour to get a jury. Consider the waste of time, the expense, the interminable delay to secure a jury in this country, especially in a criminal case. The lawyers are to blame. On organized effort by all the Bar Associations would soon change this, as the majority of the legislators are composed of lawyers. We are glad to have the "Chicago Tribune" endorse our position, so often expressed in editorials, viz:

Last week was spent in one court in trying to get a jury to try the men caught in the raid on the Drake Hotel. And Saturday they were four men short of the required twelve.

In England, where the efficiency of the system of dealing with criminals is as remarkable (to us) as is the inefficiency of our system (to the Britons), an hour or two would suffice and this whole case would have been tried and verdict rendered while our process was exhausting the first call of veniremen.

That is one reason why our calendars clog up and our jails are kept full of culprits waiting trial, or, worse still, are out on bail doing more mischief or laying wires to defeat justice.

In cases which have had great publicity, like the Drake crime, the process of getting a jury is especially slow, difficult, and unsatisfactory owing to the rule which permits a challenge for cause if the venireman says he has formed any opinion. Our people are generally literate and read the news, and if the case is notorious it is very hard to find men who have not formed some opinion. The rule therefore slows down the trial and also lowers the intelligence level of juries. Is it necessary?

We think emphatically it is not. If the venireman has no personal or special prejudice against the defendant and if the opinion he has formed is merely tentative, that is, if it is only such an opinion as any casual reader would necessarily form from reading news, and if he swears he will give the accused a fair trial according to the evidence, he should not be challengeable for cause, in our opinion.

We think our rule is excessive in its caution and is producing serious results. It has greatly weakened our defense against crime. In sensational crimes it is especially important that punishment shall be prompt, but it is in these crimes that justice is most handicapped by the rule and most retarded. We do not think it is essential to the protection of innocence, and we think it should be modified not only in order to make speedier trials but also in order to get better juries."

SAVING THE BABIES

September 8, 1925.

The Chicago Medical Recorder,
81 East Madison St.,
Chicago.

Dear Editor:

I have read with deep interest your editorial "Saving the Babies," but others who have read the circular letter referred to do not arrive at the same interpretation as you. You will note that paragraph 4, the real meat of the letter offers a nurse assigned from the Health Department to educate the mother in breast feeding.

You must admit that it is humanly impossible for any nurse to follow the instructions of the several physicians she must meet in this sort of work, and the result will be that she will follow those instructions furnished by the Department of Health rather than those of the attending physician.

If the Department of Health really wants to improve conditions, let them carry on an educational propaganda campaign through your columns and those of their own weekly bulletin "in the methods of conserving and increasing the flow of breast milk, and teach manual expression and other things." Such a correspondence course for practicing physicians will help the practitioners and the community as a whole. But nothing can be accomplished by trying to substitute a Department of Health nurse for the family doctor.

CHARLES DRUECK,
Pres., South Side Branch,
Chicago Medical Society.

(The MEDICAL RECORDER *is pleased that the editorial on "Saving the Babies" has interested the president of the South Side Branch of the Chicago Medical Society. We respectfully refer his criticism of the method of work to the Department of Health and the president of the Chicago Medical Society as a whole. The suggestion of vigorous education by the printed page on how to develop and increase the flow of breast milk is valuable. We believe the effort to DO SOMETHING is to be encouraged. The value of methods will be shown as the work develops.*—ED.*)*

FROM THE KNIGHTS OF THE DARK NIGHT

Doctors should know that during the space of one dark night, according to postal authorities, a packet of pills can fly from Chicago to New York at the rate of ten cents an ounce. Or, in other words, a prescription left at the Post Office by a Chicago physician before 6:00 P. M. can be taken by his patient in New York with breakfast next morning. And should it be imperative that the patient take his medicine before breakfast, a special delivery plaster on the package along side of the winged one will insure even this possibility.

Authorities further tell us that we may send anything to New York at this ten cent rate on any dark night—other

than Saturday, Sunday, holidays, and days preceding national holidays,—provided it is not damageable by freezing, does not weigh over fifty pounds and is not more than eighty-four inches in length and girth. And, further, if it's a dark night, we are told to write in bold, black letters, preferably just below the stamps, "Via Night Air Mail." Of course we should do this on light nights too. But since dark nights are the more common, and day rates and regulations do not apply even on light nights, we have printed only the dark night rules.

Seriously, this over night mail service from Chicago to New York is an important, historical step in the annals of the United States Post Office Department, and while at the present time not of as great value to the medical profession as to business men, it is certainly worthy of note in our editorial columns.

DISTINGUISHED LECTURER IN CHICAGO

The Chicago Tuberculosis Institute has invited a distinguished guest to Chicago in the person of Dr. Allen K. Krause. He will speak Thursday evening, Oct. 1, to physicians. This will be in conjunction with the regular meeting of the Chicago Tuberculosis Society. On Friday afternoon, 4:00 to 5:00, Oct. 2, to nurses and social workers at the City Club, Plymouth Court, and on Friday evening to medical students at the Morrison Hotel, Parlor B. On Saturday evening there will be a dinner at which an interesting program will be given.

Dr. Allen K. Krause is Associate Professor of Medicine and Director of the Kenneth Dows Tuberculosis Research Laboratories at Johns Hopkins Hospital. He was born in Lebanon, Pa., 1881. He is a graduate of Brown University and also of Johns Hopkins University.

In addition to his position at Johns Hopkins, he has served as Assistant Director of the Saranac Laboratory at Saranac Lake, N. Y., and is also lecturer at the Trudeau School of Tuberculosis in that city. Since the founding of the American Review of Tuberculosis by the National Tuberculosis Association in 1917, Doctor Krause has served as managing editor and in that capacity has developed what is recognized the world over as the leading journal in tuberculosis. In fact, the American Review of Tuberculosis sets a high standard in any group of scientific publications.

Doctor Krause is a member of the American Society of Clinical Investigation, the American Climatological and Clinical Association, the American Association of Pathologists and Bacteriologists, American Association of Anatomists, American Society of Bacteriologists, and the National Tuberculosis Association. His two books, "Rest and Other Things," and particularly "Environment and Resistance," published in 1923, have had a wide sale. His series of essays on tuberculosis published in the Journal of the Outdoor Life since 1918 have been commended and used in varying ways in almost every civilized country of the world. He has written extensively on tuberculosis for many other publications. He is a regular contributor also to Nelson's Loose Leaf System of Medicine and to the Encyclopedia Brittanica.

Doctor Krause combines an intimate knowledge of medicine itself, and of the history of medicine, with the literary ability to express himself in an easy, fluent, intelligible style.

Once Merry Optimists

The man who tried to get Los Angeles the night company came in to hear his radio.

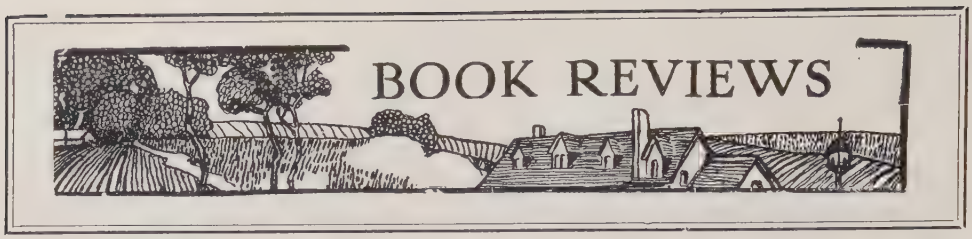
The man who bought pre-war stuff from a strange bootlegger.

The man who thought it was all right for son to have a car of his own.

The man who thought a flivver was a match for an express train.

The man who thought a husband was head of the house.

Those still living are among our leading pessimists now.—Cincinnati Enquirer.



The Surgical Clinics of North America (Issued serially, one number every other month.) Volume V, Number III (Mayo Clinic Number—June, 1925.) 260 pages with 115 illustrations. Per clinic year. February, 1925, to December, 1925.) Paper, $12.00; Cloth,, $16.00 net. Philadelphia and London: W. B. Saunders Company.

The June issue of the Surgical Clinics of North America is known as the Mayo Clinic Number and is most excellent. The subjects are varied and numerous, and the contributors leading members of the Mayo Foundation, among them Charles H. Mayo, Wm. J. Mayo, A. W. Anson, E. Starr Judd, H. I. Lillie, Frank C. Mann, Walter E. Sistrunk, Donald C. Balfour, Melvin S. Henderson, Verne C. Hunt, and others. Among the subjects treated we may mention ulcer of the stomach and duodenum, prostatic calculi, chronic lesions of the bone, plastic surgery of the nose empyema, observations on glucose as a therapeutic agent, splanchnic block, and many other interesting subjects.

The Medical Clinics of North America (Issued serially, one number every other month). Volume IX, Number I (St. Louis Number. July, 1925). Octavo of 275 pages with 67 illustrations. Per clinic year (July, 1925, to May, 1926). Paper, $12.00; Cloth, $16.00 net. Philadelphia and London: W. B. Saunders Company.

This is the St. Louis number and is distinguished by the excellency of its make-up, containing the record of a large number of valuable clinics, among them on hydrocephalus, diabetes mellitus in infants and children, tryparsamid and paresis, quinidin in auricular fibrillation, etc. Professors William W. Graves, McKim Marriott, Sidney I. Schwab, Elsworth S. Smith, Baron S. Veeder. John Zahorsky, Francis M. Barones, J. M. Brady, J. Curtis Leiter, and other eminent St. Louis clinicians are among the contributors to the excellent volume.

Diabetes. Its Treatment by Insulin and Diet. A Handbook for the Patient. By Orlando H. Petty, A.M., F.A.C.P., Professor of Diseases of Metabolism, Graduate School of Medicine, University of Pennsylvania; Physician in Charge of Departments of Diseases of Metabolism, Hospitals of the Graduate School of Medicine, University of Pennsylvania; Philadelphia General Hospital, and Roxborough Memorial Hospital; Visiting Physician Roxborough Memorial Hospital, and William H. Stoner, A.M., M.D., F.A.C.P., Associate Professor of Biochemistry, Graduate School of Medicine, University of Pennsylvania; Assistant Visiting Biochemist, Philadelphia General Hospital; Assistant Metabolic Physician, Hospitals of the Graduate School of Medicine, University of Pennsylvania, and Philadelphia General Hospital. F. A. Davis Company, Philadelphia. Price $1.50.

This is the second edition of this practical volume which is intended for

and is of great practical value to the intelligent diabetic. It treats on foods, how to weigh and measure them, methods of estimating the diet, sugar tests, insulin, etc., and gives also a number of valuable receipes.

Pediatric Nursing. A Text-Book for Nurses. By Abraham Levinson, B.S., M.D., Associate in Pediatrics, Northwestern University Medical School; Attending Pediatrist, Children's Department, Cook County Hospital, Chicago; Attending Pediatrist, Sarah Morris Hospital for Children of the Michael Reese Hospital, Chicago; Attending Pediatrist, Mt. Sinai Hospital, Chicago. Lea & Febiger, Philadelphia and New York. Price $2.50.

Dr. Levinson, who is an accomplished pediatrician at Michael Reese and other hospitals in Chicago, is therefore well qualified to write this text book on "Pediatric Nursing." It is one of the best we have seen for some time, especially as it is completely up to date and covers the subject in a very efficient and clearly understood manner.

It does not go into more details than necessary and has many invaluable chapters on various subjects of particular interest not only to nurses but also younger physicians and medical students. For instance, the very important, practical chapters on "The Kind Grandmother," "How to Win Her," "The Nurse as a Mediator," "The Foreign Mother and Her Child," "Racial and National Characteristics," etc., all important factors in being an understanding nurse.

This book does not teach too much, which is the chief objection we have for similar books for nurses, but gives them all and sufficient, and we recommend it highly.

A Compendium of Diseases of the Skin. By Jay Frank Schamberg, A.B., M.D., Professor of Dermatology and Syphilology Graduate School of Medicine, University of Pennsylvania; Fellow of the College of Physicians of Philadelphia; ex-President of the American Dermatological Association, Director of the Research Institute of Cutaneous Medicine, Philadelphia, etc., etc. Seventh edition, revised and enlarged with 119 illustrations. P. Blakiston's Son & Co., Philadelphia. Price $2.00.

Anything that Schamberg writes is good. He is an expert in skin diseases, and his compendium is, of course, as good as any compendium on that subject, if not better. While we are not great believers in compendiums, it must be admitted that for the student and general practitioner, too busy to read the standard works on the subject, a reliable compendium is of service,—this one especially so.

A Compendium of Obstetrics. Especially Adapted to the Use of Medical Students and Physicians. Revised and edited by Clifford B. Lull, M.D., Instructor of Obstetrics, Jefferson Medical College, Philadelphia; Assistant Obstetrician to the Maternity Department, Jefferson Medical College Hospital; Attending Physician, Dept. of Gynecology & Obstetrics, Philadelphia General Hospital; Assistant attending Obstetrician, Philadelphia Lying-In Hospital. Tenth edition, 84 illustrations. P. Blakiston's Son & Co., Philadelphia, Pa. Price $2.00.

The remarks we have just made above regarding a compendium hold good for this book too. We have to admit, as a matter of fact, though, that this is an unusually good reminder of this sub-

ject, and while very much condensed, of course, still is an excellent quiz compend as well as a reliable guide for immediate action, as for instance in a case of complicated delivery. For this purpose we are glad to recommend it, taking it for granted, of course, that the purchaser of such a compendium always has an exhausted text book on the subject in his library.

Clinical Features of Heart Disease. An interpretation of the Mechanics of Diaignosis for Practitioners by Leroy Crummer, M. D., Professor of Medicine, University of Nebraska. Introduction by Emanuel Libman, M. D., Physician to Mount Sinai Hospital; Professor of Clinical Medicine, Columbia University, N. Y. Paul B. Hoeber, Inc., New York. Price $3.00.

This is a very interesting book on various forms of heart disease and is of special use to the younger practitioner. Every subject is considered in a plain and common sense way, the diagnosis made clear, and treatment simple, efficient, and up to date. We, therefore, recommend it very highly and agree with Professor Libman of Columbia University, who, in his introduction, states that for many years we have been in need of books of such character, based as it is upon a prolonged study of patients actually observed. It contains a mass of valuable facts and suggests a great many which are original with the author. The book is a timely one, for "everywhere medical men are realizing that the case study of clinical phenomena is as necessary now for the training of the physician as it was in the past."

The Mental Growth of the Pre-School Child. By Arnold Gesell, Ph. D., M. D., Professor of Child Hygiene, Director of Yale Psycho-Clinic, Yale University. The Macmillan Company. 447 pages. Price $3.50.

Although this book deals with the mental growth of the preschool child, it is indeed well described as a new volume in the field of developmental pediatrics. It is concerned with a period which has for the most part been much neglected—the runabout or ambulatory period from 2 to 6, as well as infancy preceding this.

As the result of an intensive study of normal preschool children, Gesell here offers what the subtitle well describes as a psychological outline of normal development from birth to the sixth year, including a system of developmental diagnosis. Its object is definitely to serve as a reliable guide book for developmental diagnosis, with the purpose of furnishing clinical norms. It is based upon an elaborate and careful study of 500 children at ten ascending levels or periods of development.

It is the most valuable work of this sort that I have seen to date.

It is illustrated with 200 interesting action photographs.

This is indeed a new field of research. Since a knowledge of developmental diagnosis is of the utmost importance for proper developmental supervision and parental guidance, we should be duly grateful to the author for his patience, industry and thoroughness in ploughing up hitherto relatively untilled soil.

This work should be of interest and value to the general practitioner, the pediatrist, the neurologist and psychiatrist, the educator, the student of child study and behavior, and the inquiring parent.

Meyer Solomon.

Psychology. What it has to teach you about yourself and your world. By

Everett Dean Martin, Director, The People's Institute. The People's Institute Pubishing Company, New York. $3.00.

This is a helpful series of practical lectures dealing with some of the outstanding problems of psychology today.

There are 20 separate pamphlets, enclosed in a book cover, which fits into an appropriate box, both the latter being of pasteboard. Each pamphlet is a lecture which may well stand alone—hence they have been called "lectures-in-print."

The author discusses briefly and clearly the essential points in such related problems as psychoanalysis, behaviorism, the uses and abuses of psychology, the problem of consciousness, habits, emotions, the unconscious, the intelligence tests, etc.

It is a novel method of presentation. It permits one to carry one or more lectures in one's pocket to read at leisure.

Martin knows his subjects and his presentations are authoritative and accurate, as well as simple and brief.

He has no axe to grind and endeavors to be fair, to avoid extremism or hobbyism, and to take the middle of the road.

The lectures can be recommended as a useful outline of some present-day problems in psychology, given in a practical manner for the average intelligent reader. Meyer Solomon.

The Road to En-Dor. A novel by Louis Joseph Vance. E. P. Dutton & Co., New York City. Price $2.00.

"The Road to En-Dor" is one of the recent books which have come to our notice on account of its being a very interesting study of human nature, which is so differently portrayed in the striking personalities of Dr. Pentecost, the free-thinker and psychologist, and Andrew Streator, the minister who is of the narrow-minded, suspicious kind of goodness, and who brings such a lifelong tragedy into his wife's life, whom he yet loves very devotedly. The son, Dalzell, is the innocent victim of circumstances, but since the book gives something new in the way of telepathic treatment, it keeps its readers interested to the last chapter which, fortunately, ends happily.

Lister's Diabetic Diet Diary.—Physicians need no longer depend on the vague recollections of diabetic patients concerning their daily diets. Lister Bros., Inc., 405 Lexington Avenue, New York city, have prepared a forty-page diet diary that makes it a simple matter for the diabetic patient to keep a record of what he eats each day and jot down all the various data that the physician needs to know.

Lister's Diabetic Diet Diary contains a wealth of information for diabetics, including complete food tables and a comprehensive article on "Diet Computation" by Dr. Frederick M. Allen. Physicians may secure copies for the use of their patients (free of charge) by writing to Lister Bros., Inc.

Postgraduate Work in Vienna

Dr. Gustav Dinolt of Vienna, Austria, writes that for purposes of organizing regular classes in postgraduate work for American physicians, there has been formed an "American Medical Association of Vienna," and that its address is Vienna IX, Spitalgasse 21, Café Klinik. Dr. Dinolt advises that persons contemplating study in Vienna should write to the secretary of this association for information regarding the courses; he should state the kind of work desired, when he will be present and when to book his course. The classes for 1926 have not yet been fixed. Each course is limited to about eight to ten students; advance information is therefore essential. The courses are nearly all in English, some in German only; they cost from $8.00 to $20.00 per month, according to the number of hours. There are plenty of places where one can live for about $2.00 per day per adult.

NEWS ITEMS

Dr. Truman W. Brophy, Chicago, was awarded the Miller prize for dental research at the International Dental Federation, Geneva, Switzerland, August 3, and was also made an honorary member of the Swiss Odontological Society.

Dr. Allen K. Krause, associate professor of medicine, Johns Hopkins University Medical Department, Baltimore, will give a series of lectures in Chicago, October 1, under the auspices of the Chicago Tuberculosis Institute, one to medical students, another to nurses and social workers, and another to physicians.

New Train Service Inaugurated

The Pennsylvania Railroad Company announces the inauguration of a through Pullman Service from New York City to French Lick, Indiana, via North Philadelphia, Pittsburgh, Pennsylvania; Columbus, Ohio, and Indianapolis, Indiana. The train leaves Pennsylvania Station, New York, at 4:55 P. M., Eastern Standard time, and arrives at French Lick, Indiana, at 4:00 P. M. Central Standard time.

American Board of Otolaryngology

The next examination given by the American Board of Otolaryngology will be held at the Cook County Hospital, Chicago, on October 19, 1925. Application should be made to the Secretary, Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Missouri.

Typhoid Outbreak

Twelve cases of typhoid fever were reported at Battle Creek between August 12 and August 27. An investigation by the local health department showed, it is reported, that three of the cases had been "imported" and that nine had been traced to milk supplied by a certain dairy. The sale of milk from the dairy has been discontinued. Five of the cases thought to be due to milk were in children. According to the health officer, Battle Creek has not had for several years a case of typhoid fever which could be traced to a local source.

New Hospital Building

The Children's Memorial Hospital, 735 Fullerton Avenue, Chicago, has taken out a permit for a five-story building, the Martha Wilson Memorial.

New Director of the Medical Publicity Bureau

The Medical Publicity Bureau takes unusual pleasure in announcing the appointment of Dr. John James McNulty as its active director. Dr. McNulty, who is the son and grandson of a physician, began his career as house physician to the Presbyterian Hospital of New York. Dr. McNulty is one of the pioneer endocrinologists of America and his recent volume, *Present Day Endocrinology: Its Application in Modern Therapy,* is prefaced by Dr. Charles E. DeM. Sajous, Professor of Endocrinology in the University of Pennsylvania, and by Dr. H. Edwin Lewis, Editor of "American Medicine," which was the first journal in this country to establish a department of endocrinology. Dr. McNulty's various researches and his training and experience in the practical aspects of medicine, combine to make him an ideal director of the Medical Publicity Bureau.

Purdue University's Summer Camps

The extension division of Purdue University, in cooperation with the state board of health, has for three years fostered summer camps for boys and girls throughout the state. There were fourteen camps this year, with an average of about 200 boys and girls from rural communities in attendance. The state board supervised the sanitation of these camps, the first aid treatment, and the daily "medical talks." The camps were at Vincennes for the counties of Knox, Greene, Washington and Sullivan, and Norman Beatty was the sanitary director; at Versailles for the counties of Ohio, Ripley, Dearborn and Switzerland, and Dr. Arthur L. Oilar was sanitary director; at Valparaiso for the counties of LaPorte, Porter and Lake, and Dr. Harvey

W. McKane was the sanitary director; and at Monticello for the counties of White, Carroll and Jasper, and Dr. Thurman B. Rice was the sanitary director.

Doctors Differ

(*Reprinted from The London Times*)

Mr. Justice Eve, in the Chancery Division, London, gave judgment in the claim by Dr. Harry Beckett Overy, of Lowndes Street, Belgrave Square, to have the partnership between him and Dr. Dudley Vaughan dissolved.

After counsel had concluded their addresses,

His Lordship said he assumed that medical practitioners knew their own business better than he did. But he must confess that he was somewhat surprised when he heard that the life-long partnership entered into in this case was by no means uncommon in the profession. Regard being had to the appalling amount of discomfort and unhappiness incident to another contractual relationship of similar duration, he would have thought that any suggestion or proposal for such prolonged attachment between two comparative strangers as partners would have been emphatically repudiated.

This case illustrated the risk of entering into these lengthened communions. This life-long contract had not been running for twelve months before the plaintiff had begun to doubt whether, after all, he had secured the man he had been on the look out for—namely, an energetic, active, and keen helpmeet. Before another twelve months he was satisfied that he had not done so. Some of the patients were not attracted by the new partner, and the life-long union must be put an end to with as little delay as possible. Before three years had expired the life-long partners were not on speaking terms, and in another six months the writ claiming dissolution was issued. It was obvious that when he came to the conclusion that the defendant was not the right man in the right place he also made up his mind that the only cure for the misfortune which had fallen upon the venture was separation, and with perfect consistency he made no single attempt to get his partner to alter his ways. He realized that he and the defendant would never run successfully in double harness. The defendant refused to adopt that view. Having embarked his all in the purchase of a share of the practice, and established himself in a house suitable to carry on his profession, he failed to recognize his incompatibility to work with the plaintiff, and he did not admit that the plaintiff had any just reason for wishing to put an end to the partnership.

It was said that Dr. Vaughan had no more than one occasion offended a lady patient. The majority of the patients of this practice appeared to be of the female sex, and they had been so unattracted by him as to intimate that they would not further desire his attendance upon them. This decision might be due to other circumstances than roughness or inattention on the part of the visiting doctor. Most of them knew that when a doctor assigned their illness to causes other than those they thought were the real causes, or put them on a diet which was most unattractive, they did not like the doctor; but when he offered them a trip to the North of France, or even to the seaside instead of sending them to bed to eat arrowroot, they thought he was a very clever man. His Lordship brushed aside the complaints as to not keeping a motor car or not having any equipment bag. These matters might afford a reasonable ground for one suggestion from one partner to the other, but the Court of Chancery would not regard is as a ground for dissolution if one partner objected to the attire which the other chose to put on. His Lordship dealt with other charges, and said he did not think that the cumulative effect of all these matters was to raise the faintest cause for dissolving the partnership. As to the allegation that Dr. Vaughan put his arms round and kissed a girl at the house of a patient in Prince Arthur Road, his Lordship said he was bound to examine the story with meticulous care, and having done so he was satisfied that Dr. Vaughan was not guilty of any such act as was alleged. It remained for his Lordship to say that all the grave charges made in the case were absolutely disproved. He dismissed the action, but in doing so he desired to say with emphasis that nothing had transpired in the case, and nothing was involved in the judgment, which ought to affect the mind of any single patient of either of these gentlemen.

The action was dismissed with costs.

The Chicago Tuberculosis Institute Wins Honors

The Chicago Tuberculosis Institute came in for congratulations at the recent national tuberculosis conference in Minneapolis where it was announced that its expenditure for mail sale letters containing Christmas seals was the lowest in the country.

All the large cities now sell Christmas seals by mail, as this is the most efficient method for densely populated communities. They have recently compared notes as to the cost, for each organization is trying, of course, to reduce the expense in order that all available funds may be used for actual public health improvement.

Up to the present 10 cents per letter has been regarded as a fair price, including the cost of the enclosed seals, the two envelopes, and the letterhead, as well as the printing, folding and other labor charges.

Last December's Christmas seal letter in Chicago cost 8.6 cents; this included 4 cents postage. So the Chicago Tuberculosis Institute now stands at the top of the low-cost list. Chicago attained a similar honor recently when it was announced that the Institute had achieved the highest percentage of increase in Christmas seal sales throughout the United States.

Suicide and Age

Suicide, in the wage-earning group of the American and Canadian populations is approximately two and one-half times as frequent among men as among women. This is shown by what has happened among the more than 16,000,000 Industrial policyholders of the Metropolitan Life Insurance Company.

The above ratio, however, relates to all ages combined. When the suicide data are studied by age periods, it is shown that the ratio of deaths of males to those females varies greatly at different periods of life, and that the preponderance of self-murder among males increases perceptibly with advancing age.

Suicide does not assume much numerical importance until age 20 is reached. Between 20 and 24, the death rate for males approximates one and a half times that for females. Between ages 25 and 34, the ratio is a little more than two to one; during each of the next 10-year periods, it is about four to one; at 55 to 64 years, it approximates five to one; and after age 65, there are about seven times as many suicides among men as among women.

One age period, namely, 15 to 19 years, stands out in bold relief from all the rest. This is the only time of life in which suicide is more common among females. In 1923, the suicide rate of young women of these ages insured in the Metropolitan's Industrial Department, was 4.1 per 100,000—or nearly two and one-half times that for males (1.7). It is interesting to note that more than half of the young women who suicided at these ages, used solid or liquid poisons as the means of taking their lives, and that substantially one-quarter died by inhalation of poisonous gas.

At every age period of life up to 45 years, in fact, women suicides used solid or liquid poisons as lethal agents more than any other method; poisonous gases ranked next. Beginning with age 45, however, and up to age 65, inhalation of gas was the means most used. Among males, on the other hand, shooting is the method most generally employed, and this seems to hold for all of the age periods up to age 65.

The above data relates to white policyholders only. Suicide is much less frequent among colored persons. With negro females, however, the sharply increasing death rate, with age, which applies to white women, is not in evidence. For colored women insured in the Metropolitan, the death rate was higher at ages 25 to 34, in 1923, than for any other age group; and the mortality among females exceeded that for mades not only at 15 to 19 years, but also at 20 to 24.

Take an Umbrella

Bride-to-Be—"Do you know the girls are giving me a breakfast shower?"

"What are they serving—grapefruit?"—Life.

It's a Worry Either Way

"What is your chief worry?"

"Money."

"I didn't know you had any."

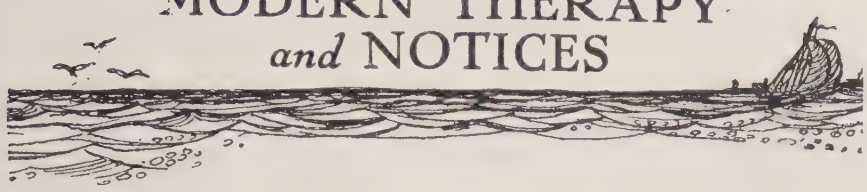
"I haven't."—Jacksonville (Fla.) Times-Union.

Not Argumentative

Teacher—"Now, you must prove to me that the earth is round."

Pupil—"Why? I never said that it was."—Madrid Buen Humor.

MODERN THERAPY *and* NOTICES



A NEW BRAND OF INSULIN

The pancreas contains two kinds of tissue cells. The cells of one kind secrete the pancreatic juice, an external secretion which is conducted into the intestine through the pancreatic duct. The cells of the other kind are scattered in groups throughout the gland. These are known as the "islands of Langerhans." These "islands" have no outlet through ducts, but produce an internal secretion which enters the blood stream directly through the numerous blood vessels with which they are supplied. It is the active principle of this internal secretion, known as Insulin, which the Toronto investigators succeeded in separating from other pancreatic extracts and in proving that it helped diabetic patients to utilize carbohydrates in a normal manner.

The interesting announcement appeared a short time ago of the appearance of Insulin-Mulford, a brand of Insulin marketed by the H. K. Mulford Company under license granted by the University of Toronto.

Insulin-Mulford is prepared in accordance with the method developed by the Toronto investigators. Every lot is carefully tested and will conform strictly to the standards established by the Insulin committee.

Insulin-Mulford—a highly purified and uniformly potent preparation—is now available for general distribution, in 5 cc vials, in three concentrations, designated as 10-unit, 20-unit and 40-unit.

THE IMPORTANCE OF OXYGEN TO VITALITY

Oxyen is the veritable "breath of life." Without it all metabolism would cease and both animal and vegetable existence would expire of inanition. The atmospheric oxygen taken up by respiration is the chief source of this life maintaining element, which, however, cannot function completely without the necessary food pabulum, which is introduced through the ordinary food stuffs consumed by everyone. Food must be oxygenrated and oxidized in order to separate the nutritive and absorbable from the effete and unabsorbable portions of the daily provender. Under ideal conditions the daily diet supplies the mineral inorganic salts required to hasten and encourage such oxygenation and oxidation. Often, however, especially now, when so many denatured foods are marketed, there is a decided lack of such mineral constituents. In this era of demineralized and devitalized foods, Gude's Pepto-Mangan is a peculiarly valuable product wherewith to supply the deficient oxygenators. It is equally acceptable to young and old; it is quickly appropriable by the blood; it stimulates the desire for food, increases the number of red blood cells and the percentage of hemoglobin, and supplies the needed addition to the average diet.

Samples, literature, etc., obtainable from M. J. Brietenbach Co., New York, N. Y.

THE MENACE OF INTESTINAL TOXEMIA

Intestinal toxemia early leads to derangement of the metabolism, with poisoning, sooner or later, of the body cells and functional disturbance throughout the organism. It is easy to see, therefore, how various organic diseases may take their origin from toxins generated in the bowels, and it is mainly, if not entirely, on account of neglected habitual constipation that chonic diseases develop and progress.

If many chronic ailments are to be avoided or postponed as the years multiply, and the health of the average person is to be safeguarded and promoted, then it is of the utmost importance that regular and free evacuation of the bowel contents should be assured with requisite frequency. In attaining this object no remedial measure offers more satisfactory results than the administration of Agarol, a well-balanced combination of pure mineral oil, agar-agar and phenolphthalein. This fact has been conclusively proven and clinical experience has shown that Agarol provides a rational and dependable means of combating and overcoming constipation.

It mixes with the feces, renders them soft and plastic, and by supplying the necessary lubrication of both the intestinal canal and the bowel contents, makes their passage easy, and thus assures free and regular emptying of the lower bowel without straining or discomfort.

Of the countless laxatives or evacuants available today, there is none that will be be found so satisfactory from every standpoint as Agarol. Acting solely in a physiologic way, it produces free and easy movements which can be relied on not only to prevent the development of hernia, hemorrhoids and other physical defects, but what is of especial importance it substantially aids in the elimination of the toxic products which have been shown to play so conspicuous a part in the causation of many chronic ailments.

AN AID TO RECOVERY

Following severe disease during which there has been considerable disturbance of metabolism, recovery frequently "hangs fire."

This is often due to an inadequate supply of the "chemical foods," Calcium, Sodium, Potassium, Manganese, Phosphorus and Iron. These, together with the "dynamic" effect of small doses of Quinine and Strychnine usually overcome such physiological inertia.

Syr. Hypophosphites Comp. "Fellows" is the ideal form in which to administer the above elements being bland, stable, non-irritating and efficient, to which more than fifty years of increasing use bear witness.

"Just as Good Indeed!"

Our diamonds have the same purity, the same weight and the same sparkle as the genuine article, and in order to make the imitation perfect, we sell them for exactly the same price.—Le Rue Blas (Paris).

He Wouldn't Kill the Goose

The young doctor sat with a friend at the window. A lady passed. "That is the lady I love," said the doctor.

"Why not marry her?" asked the friend.

"Not likely! She is my best patient."—Lustige Blaetter (Berlin).

Chicago Maternity Hospital and Training School for Nurses and Midwives

Address DR. EFFA V. DAVIS
512 Wrightwood Ave.
CHICAGO

Solomon has attested to the strangeness of a man's way with a maid, but the way of a maid being courted has always been a mystery to a man. A girl dismissed her sweetheart with the statement that she could not think of marrying him until he had a few thousand dollars. A few months later she met him and asked him how much he had saved. "Thirty-five dollars," he said. "Well," she remarked with a blush, "I guess that's near enough."—The Argonaut.

In a Wexford church, the minister announced his text, "Paul we know and Apollos we know, who who are these?"

Just then the verger was showing two strangers into a pew, so in an audible whisper he said, "Two commercial travelers from White's Hotel, your reverence."—The Western Christian Advocate.

An advertisement that appeared in the columns of an Indian paper must be among the best examples of Babu English. Here it is, word for word:

"Mahomedsman, hair-cutter and clean shaver. Gentlemen's throats cut with very sharp razors, with great care and skill. No irritating feeling afterwards. A trial solicited."—Buffalo Express.

Thomas was not a prime favorite with his rich uncle. In vain did he try to impress him, but the old man was not easily impressed.

One evening the young man went to his uncle's home for a call, and in the course of conversation asked:

"Uncle, don't you think it would be rather foolish for me to marry a girl who was intellectually my inferior?"

"Worse than foolish, Thomas," was the reply. "Worse than foolish — impossible." — Success Magazine.

Houdini, charged with disorderly conduct after smashing up an office, replied: "They locked the door and I had to fight my way out." Bang goes another illusion! We thought he could open anything but a car window.—The New Yorker.

"Mother," said a little boy after coming from a walk. "I've seen a man who makes horses."

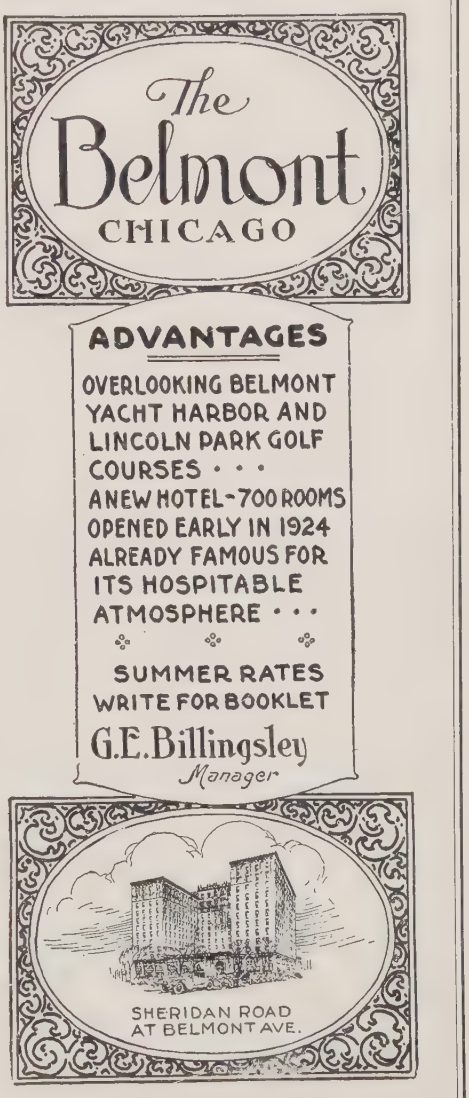
"Are you sure?" asked his mother.

"Yes," he replied. "He had a horse nearly finished when I saw him; he was just nailing on his back feet."—Our Dumb Animals.

Teacher—"Now, suppose I am leaving the school and a man comes up to me, give me a blow which knocks me down and my head strikes the pavement with great force and I am killed. What is the consequence?"

Pause. Finally a scholar rises and says: "We should have a holiday!"—Sondagsnisse-Strix, Stockholm.

If printing crime news encourages crime, perhaps we should quit printing earthquake news, too.—Kansas City Star.



CAUSAL MECHANISM OF DIABETES MELLITUS

The causal mechanism of diabetes is conceived by A. E. Epstein, New York (*Journal A. M. A.*, July 4, 1925), to be as follows: Changes in the permeability of the capillary vessels can result in the passage of trypsin into the blood stream and its ultimate entry into the liver via the portal circulation. The first effect of the mobilization of trypsin is a glycogenolysis with a consequent hyperglycemia and glycosuria; the second is the neutralization of insulin secreted into the blood stream, thereby causing a deficiency of active insulin. Epstein claims for his theory that it is in closer accord with experimental evidence and clinical phenomena of diabetes mellitus than any heretofore proposed.

PERNICIOUS ANEMIA, FOLLOWING ILEOSTOMY

The absorption of hemolytic, myelotoxic or neurotoxic material from the contents of the small or large intestine has been regarded as more than a plausible possibility in pernicious anemia because of the prominence of gastro-intestinal symptoms, the atrophy of the gastric and intestinal mucous membrane, and the occasional association of pernicious anemia with intestinal stricture and also parasitic disease. This belief led C. F. Dixon, J. G. Burns and H. Z. Griffin, Rochester, Minn. (*Journal A. M. A.*, July 4, 1925), to the decision that, under favorable circumstances, they would recommend temporary elimination of the colon by means of an ileostomy in cases of pernicious anemia, with a view to the determination of the influence of colonic absorption on the course of the disease. Ileostomy may be performed with minimal risk, and, should prolonged improvement occur, ileosigmoidostomy could be performed later, not removing the colon, but excluding it as a mucous tube. Six cases are reported. The patients have all shown the temporary improvement that so frequently follows any treatment for pernicious anemia. All have maintained a good appetite, even with the recurrence of anemia. They all lost the icteroid tint, and it did not reappear, even in those who later became anemic. Glossitis recurred in only one case when irrigation of the colon became difficult, and this disappeared in a few days after the colon could be flushed. Probably the most striking feature has been the disappearance of paresthesias in all but one case, in which there was very marked improvement. This patient had moderately advanced cord changes and walked with extreme difficulty; even so, the paresthesias have not been troublesome since ileostomy, and the patient is able to walk without assistance. One patient showed slight improvement objectively and on neurologic examination. Two patients of the series died from conditions unrelated to pernicious anemia. Two have done unusually well. Two have had a recurrence of the anemia. One patient, who had very marked manifestations of the disease, has been in excellent condition for eleven months. Ileostomy cannot at present be advocated as a therapeutic measure, but in small groups of cases it is justifiable until its effect is definitely known. The procedure alters certain features of pernicious anemia and may lead to more important results.

Influence of Mechanical Pressure on Wound Healing.—In the preparation and transplantation of pedicle flaps one of the most disastrous incidents is the failure of union of the flap to its original or its new bed and one of the most efficient preventives, even in the presence of a moderate amount of contamination, is evenly applied pressure. The safest and most efficient plan of applying this, according to Blair, is the incorporation in the dressing of one or several large, soft marine sponges that have been wet, rung out in a twisted towel, and immediately bandaged in place. It is particularly useful where the graft is bedded on a surface of irregular topography and consistency. To a less certain extent this sponge pressure can help to control venous stasis which threatens the vitality of the flap.

Brain Injuries in New-Born.—Bloody and blood-tinged cerebrospinal fluid was found by Sharpe in 9 per cent. in the first series of 100 consecutive new-born babies and in 13 per cent. in the second series. Lumbar puncture as a diagnostic and therapeutic measure has proved to be a safe procedure in these cases in the absence of shock, and it is advocated in suspected and doubtful cases having the mildest signs of intracranial hemorrhage and cerebral edema. Repeated lumbar punctures of spinal drainage are advocated every six to twenty-four hours in cases having bloody cerebrospinal fluid under varying degrees of increased pressure; if spinal drainage fails to diminish the blood concentration and to lower the increased pressure of the cerebrospinal fluid, then a modified subtemporal decompression for cranial drainage is indicated. Death results from extensive intracranial hemorrhage and cerebral edema in the new-born.

SIMULATES UPPER AIR

Washington.—Altitude tests for airplane engines may be carried on at sea level in the new altitude chamber at the U. S. Bureau of Standards. In this room it is possible to get the reduced air pressure and the extreme cold of very great heights.

The altitude chamber is a small room in which the air pressure may be reduced as much as desired. The walls are of reinforced concrete about sixteen inches thick. Ammonia coils in the top serve to lower the temperature. The temperature of air entering the carburetor can be regulated separately from that in the room.

In this way, without any risk of life, the causes for failures of engines may be studied. In the test chamber motors sometimes fail because of the moisture clogging the intake manifold with snow. It is believed that many planes not be proved as the snow melted before an investigation could be made.

Spontaneous Splenic Rupture in Malarial Treatment.—With the object of endeavoring to determine whether spontaneous rupture of the spleen would with any frequency be likely to occur in enfeebled general paralytics, or whether it will be sufficiently rare to remain merely a clinical curiosity in the history of malarial treatment, observations were made by Rudolf. First of all, it is necessary to know whether the organ is enlarged and soft in the

If You Use It Once--

you will readily understand why so many physicians in choosing a reconstructive tonic invariably order or prescribe.

Gray's Glycerine Tonic Comp.

(Formula Dr. John P. Gray)

Its results will not be uncertain nor delayed, and like so many other practitioners, you will be impressed with their prompt, positive and permanent character. Best of all, your patients will be as quick to note its effects and appreciate the substantial nature of the benefits they will uniformly obtain.

The fact that Gray's Glycerine Tonic has been serving the profession for over a third of a century and that every year witnesses its increased use by discriminating medical men, "tells it own story."

The Purdue Frederick Co., 135 Christopher St., New York City

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Appealing particularly to the professional man who lives in keeping with his station yet not extravagantly, the Pershing, which is convenient to the great South Side hospitals and clinics is high in the favor of physicians and their families. Rates $2.50 to $5 per day single, $3 to $6 per day double. A quality of accommodations usually found only at the most expensive hotels distinguishes the Pershing.

Near the famed South Parks with their beaches, golf links, bridle paths and boulevards, the Pershing is also convenient to all Chicago via boulevard motor coaches, elevated express, surface cars and railroad suburban trains.

Entering Chicago, get off at 63rd St. or Englewood and you will be only a very short distance from the Pershing. For reservations or booklet address H. E. Rice, Pres. and Manager.

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Ward Rates $15.00 Per Week, Private Room Rates $30.00 to $45.00 per week.

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Efficacious in all conditions where intestinal sluggishness arising from functional derangement of the liver and portal circulation is a factor. Sal Hepatica cleans the entire alimentary canal.

Samples for Clinical Purposes

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paralytic. The weight of the spleen in health is greater than that of the spleen in general paralysis. The spleen in general paralysis also is usually harder than normal. From the pathologic evidence, therefore, it would appear that the occurrence of spontaneous rupture of the spleen in general paralytics treated with malaria must be even more infrequent than in non-paralytics suffering from malaria, in whom the accident is very rare. Although no definite statement can be made as to the frequency with which spontaneous splenic rupture is likely to occur in general paralytics treated with malaria until a far greater number of cases have been watched, it would appear from both the pathologic and the clinical evidence that the condition must be exceedingly rare and the risk of rupture in any individual person negligible.

ARSENIC POISONING

Twenty-eight cases of arsenic poisoning are reported by G. B. Lawson, W. P. Jackson and G. S. Cattanach, Roanoke, Va. (*Journal A. M. A.*, July 4, 1925). Large quantities of arsenic were demonstrated to be present in cider which had been served at the noon meal. It was later learned that the barrel had contained an arsenic compound used for spraying trees. Thirteen of these patients died, the first death occurring in six hours, and the thirteenth on the thirteenth day after the taking of the poison. Ten of these deaths occurred in the acute stage, and the other three during the subacute stage, into which the patients had passed with a cessation of the acute symptoms on the second day. Immediately following the onset, vigorous supportive and symptomatic treatment was given, and nine patients, all of whom survived, repeatedly lavaged their own stomachs with warm water. After the Marsh test had demonstrated an abundance of arsenic, it was decided to use sodium thiosulphate, with the hope of inactivating the remaining arsenic by the production of its nontoxic, insoluble sulphid. No immediate improvement was observed following the use of sodium thiosulphate. To be of possible value in acute poisoning, it should be given at once and in maximum doses. Analysis of samples taken at the time of the poisoning showed the presence of 3.38 grains of arsenic (As_2O_3) per fluidounce. Most of the patients drank several glasses of the cider, but because of the vomiting and diarrhea it was impossible to determine the amount retained.

OUTLYING ACIDOSIS

The acidity developing in the ischemic tissue is doubtless referable in the main to accumulated carbon dioxid, according to Peyton Rous and D. R. Drury, New York (*Journal A. M. A.*, July 4, 1925), for when the yellow patch resulting from an epinephrin injection is exposed to the air by eversion of a flap of skin, it rapidly becomes deep pink, a change that is especially impressive when the surrounding tissue has already decolorized. The acidity is greater than can be measured in terms of phenol red, but not much greater, as is shown by tests on rats stained with bromcresol purple or chlorphenol red. The maximum color alteration observed after epinephrin is such as would be indicative, under control conditions, of a fall from approximately *p*H 7.3 to about *p*H 6.4. The authors have given the name "outlying acidosis" to this condition, meaning thereby a tissue acidosis independent of the reaction of the blood, because lying beyond the influence of this fluid. The outlying acidosis consequent on carbonate administration is encountered only when anhydremia develops, as the hematocrit readings prove. Under such circumstances, with the blood bulk rapidly decreasing, much the same vascular shutdown is known to take place as after a bleeding. The authors' experiments have shown that a variety of substances and conditions giving rise to anhydremia will cause outlying acidosis; for example, hypertonic dextrose solution by mouth, or purgation with sodium sulphate. The acidoses thus induced are not uninfluenced by the means taken to produce anhydremia. Stained rats given dextrose solution become intensely yellow before death, a hue attained by controls only several hours post mortem; there is a tendency for the blood *p*H to fall; and skin flaps exposed to the air while the animal is yet alive show scarcely any change toward pink, an observation which would suggest that the local acidity is due in the main to acids that are not volatile. The possibility suggests itself that tests can be made for outlying acidosis by local injections of an unbuffered solution of indicator.

SCIENTIST CLAIMS TORTOISES CAN'T HEAR

(By Science Service)

Baltimore.—Either tortoises are deaf, or else much less intelligent than generally supposed, according to a report of experiments by Ryo Kuroda, of the College of Niigata, Japan, in the next issue of the Journal of Comparative Psychology.

In previous experiments with snakes, Kuroda found that most water snakes have no hearing ability, while land snakes often have an acute hearing. To further this work, it was decided to experiment with the tortoise which is a more advanced member of the reptile family.

An experimental group of several tortoises was used. Scraps of meat, which is a favorite food, were laid upon a broad copper plate which was connected with an electrical circuit. When the experimental animal attempted to snap the meat from the plate, a bell was rung and at the same time an electric current passed through the plate giving the animal a shock. If the animal were able to hear it would soon learn to associate the sound of the bell with the coming shock if the attempt to snap up the meat were made. Repeated trials with individual animals revealed no reaction to the bell sound associated with the electrical shock.

ENDOCRINE REMEDIES

BY A RELIABLE HOUSE

ORGAN-O-TONES No. 19 (Thyro-Pituitary Co.)

Thyroid substance	1/2 gr.	Apocynum (P. E.)	1/4 gr.
Pituitary (whole)	1/4 gr.	Organotones No. 12 q. s.	7 grs.
Phytolaccin	1/2 gr.		

Prescribe: Rx—One to two capsules three or four times daily.
Indications: Obesity.
Remarks: The thyroid and pituitary both have to do with metabolism. Hypofunction of either results in decreased and sluggish metabolism. By combining these glands with phytolaccin, apocynum and Organotones No. 12, very satisfactory results have been obtained.

ORGAN-O-TONES No. 4 (Ovarian Co.)

Ovarian substance	3 grs.	Thyroid substance	1/10 gr.
Pituitary (total)	1/8 gr.	Organotones No. 12	2 grs.

Prescribe: Rx—Organ-o-tones No. 4—Ovarian Co. One capsule four times daily, after meals and at bed time.
Indications: Amenorrhea; Dysmenorrhea; sexual apathy; sterility; irregularities at puberty and the menopause; malnutrition accompanying under physical development of young girls.
Remarks: One of the most effectivee of the endocrine remedies. Due to the fact that dysovarianism is more often of thyroid or pituitary origin than ovarian, this formula has proved beneficial in cases where ovarian substance alone had been tried without results.

Write us for Endocrine booklet.

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For Men — **For Women**

Formula of Dr. Iwan Bloch

After eight years' clinical experience these products stand as proven specifics.

INDICATED IN SEXUAL IMPOTENCE AND INSUFFICIENCY OF THE SEXUAL HORMONES

They contain SEXUAL HORMONES, i. e., the hormones of the reproductive glands and of the glands of internal secretion.

Special Indications for Testogan:

Sexual infantilism and eunuchoidism in the male. Impotence and sexual weakness. Climacterium virile. Neurasthenia, hypochondria.

Special Indications for Thelygan:

Infantile sterility. Underdeveloped mammae, etc. Frigidity. Sexual disturbances in obesity and other metabolic disorders. Climacteric symptoms, amenorrhea, neurasthenia, hypochondria, dysmenorrhea.

Furnished in TABLETS for internal use, and in AMPOULES for intragluteal injection.

Prices: Tablets, 40 in a box, $1.75 — **Testogan Ampoules, 12 in a box, $2.50**
100 in a box, 3.50 — **Thelygan Ampoules, boxes of 12, 2.50**

EXTENSIVE LITERATURE ON REQUEST

CAVENDISH CHEMICAL CORPORATION

88 Park Place — *Sole Agents Established 1905* — **New York**

"TUBERCULOSIS—A FAMILY PROBLEM"

The results of a ten-year demonstration of the home hospital plan of treating tuberculosis, under which the entire family is treated when a parent is afflicted, instead of sending the parent to a sanatorium and the children to an institution, are set forth in a pamphlet just issued by the New York Association for Improving the Condition of the Poor, under the title "Tuberculosis, a Family Problem".

The report points out that when tuberculosis invades the home the usual recourse is to place the patient, either the father or the mother, in a sanatorium and to place the children in a preventorium, in a foster home or with friends or relatives. Separated from his family, the patient becomes worried and discouraged, a factor which alone retards his progress; or he is likely to leave the sanatorium before a complete recovery has been effected. Continuing, the report says, in part:

"If there ever was a disease in which the family and not merely the patient is the unit of treatment, that disease is tuberculosis. The Home Hospital is a demonstration of the results which can be secured by housing the tuberculous patient and his family in a wholesome environment, by supplying the family with sufficient relief to provide for an adequate standard of living, and by providing the necessary medical and nursing care not only to insure the recovery of the patient but to prevent tuberculosis from occuring among those members of the family who had not previously been afflicted.

"When the Home Hospital idea was first conceived the objection was made by some that without complete segregation of the tuberculous, many new cases would develop within the institution itself. In our ten years' experience no new cases of tuberculosis, either of children or adults, has developed while a family was in the institution. This remarkable record we attribute to the educational work with families as to the importance of fresh air and sunlight and to simple precautions regarding sleeping arrangement and the use of common towels, glasses and dishes.

"Judged by medical results the Home Hospital is quite as effective in arresting and improving tuberculous patients during residence as any sanitorium in the country. It is further one of the most effective measures yet devised for safeguarding the health of well members of the family both by building up their resistance and by preventing the spread of infection within the family. Despite the social, educational and economic handicaps which first brought the families to our attention, patients discharged from Home Hospital apparently live longer and are economically more productive than those discharged from other sanatoria.

"The fact that practically 60% of the patients in spite of their tremendous handicap are able to assume full responsibility toward their families after discharge is abundant evidence of the lasting effect of Home Hospital treatment. Of those discharged as quiesent practically 50% were found on the follow-up to be alive and gainfully employed."

The pamphlet contains tabulations, comparing the condition of patients

PLUTO

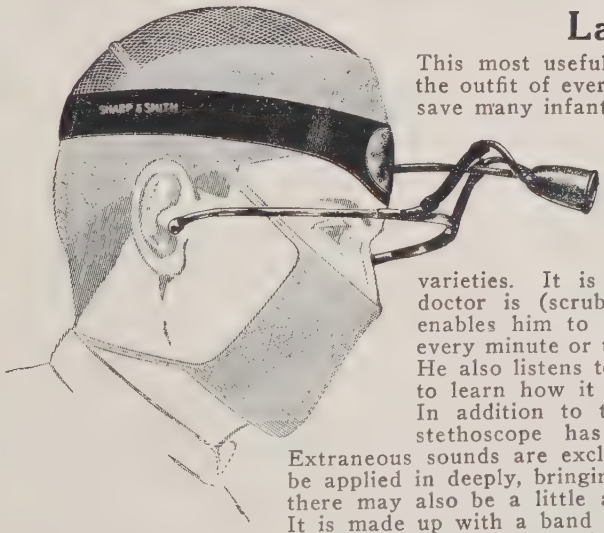
In prescribing Pluto Water, you can be sure the patient will procure an eliminant of known potency, absolutely unvarying in its constituents. Too, Pluto Water is bottled under the most sanitary conditions and sealed air-tight in sterilized glassware. Pluto is easily procured by any patient—on sale at all drug stores.

Sample and literature to the Medical Profession on request.

FRENCH LICK SPRINGS HOTEL COMPANY, French Lick, Indiana

The De Lee-Hillis Head Stethoscope

Latest Model



This most useful instrument should be part of the outfit of every obstetric practitioner. It will save many infants' and mothers' lives.

It was designed especially for use during the second stage of labor of both (spontaneous and operative), but it is even more useful for all the purposes of a stethoscope than the usual varieties. It is worn on the head after the doctor is (scrubbed up) for the delivery and enables him to listen to the fetal heart tones every minute or two without infecting his hands. He also listens to the mother's heart frequently to learn how it is bearing the strain of labor. In addition to this great advantage the head stethoscope has valuable acoustic properties. Extraneous sounds are excluded; by pressure the bell can be applied in deeply, bringing it closer to the fetal heart—there may also be a little audition from bone conduction. It is made up with a band over the top of the head, with a circular fibre head band and, for easy portability, with a ribbon woven strap.

Price, $7.50 Each

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on admission at Home Hospital with other institutions, and similar comparisons on discharge; a comparison of results achieved on discharge according to condition at Home Hospital and four sanatoria; after history of discharged adult patients, together with a detailed analysis of the cost of the home hospital plan.

DANGERS OF TAXIS IN STRANGULATED HERNIA

Taxis is little used at the present time because of its dangers and the fact that there is a much lower mortality rate if operation is performed as soon as the diagnosis is made and without attempts at manual reduction. Contrary to the general opinion, if the hernia cannot be reduced in five minutes by moderate pressure, it is inadvisable to continue taxis longer. Taxis is aided in infants, children and adults by suspending them by their feet, head downward.

Taxis is contraindicated when the hernia has been down several hours; when the onset is acute and the symptoms severe; when previous attempts at taxis have failed; when the hernial coverings are edematous; when there are symptoms of prostration and shock, and when there are signs of ulceration and gangrene.

If taxis is apparently successful the patient is not out of danger for several days and should be watched carefully for symptoms of reduction "en masse," hemorrhage, and delayed perforation of the intestine.—Leigh F. Watson: *International Clinics,* 1924, vol. 2, s. 54, p. 217-219.

FOR FEMALE ILLS

Hyperol is a uterine tonic and corrective, composed of carefully selected hydrastine, aloin, iron, apiol and ergotin in well balanced proportions, which imparts tone to the utero-ovarian blood vessels and to the muscular structures. By thus regulating the local circulation and insuring a nearer normal blood supply it relieves congestion, overcomes the nervous and reflex spasm, relieves pain and aids in rapidly restoring normal functions of the female generative organs. Owing to its unique composition, Hyperol produces a systemic tonic effect that not only substantially increases its benefits, but gives them a permanency seldom obtained from other remedies of its class.

INDICATIONS—Hyperol is indicated in all functional diseases of women such as amenorrhea, especially of chlorotic origin, dysmenorrhea, subinvolution, menorrhagia, metrorrhagia, uterine hemorrhages, the functional derangements of the menopause, ovarion neuralgia, and whenever a utero-ovarion corrective and tonic is required.

The general dosage of Hyperol is one to two capsules three times a day and at bedtime, as the physician's judgment may dictate.

FUNCTIONAL HEART TROUBLE—Bowen has used Cactina Pillets with much satisfaction in functional cardiac disturbances. One to two Pillets every 2 or 3 hours will promptly steady the heart.

DYSCHEZIA

DYSCHEZIA due to functional causes is promptly relieved, and normal action of the bowels gradually restored by the systematic use of

AGAROL

The rational composition of this exceptional preparation cannot fail to impress the thoughtful practitioner. Every ingredient fills a definite purpose, and in their composite influence so closely duplicate natural conditions that the bowels act normally without the least griping or other objectionable effect.

The more familiar the practitioner becomes with Agarol, the more he will appreciate its superiority to ordinary laxatives. A trial in some intractable case will tell him why.

AGAROL is the *original* Mineral Oil—Agar-Agar Emulsion, and has these special advantages: Perfectly homogenized and stable; pleasant taste without artificial flavoring; freedom from sugar, alkalies and alcohol; no contra-indications; no oil leakage; no griping or pain; no nausea or gastric disturbances—Not habit forming.

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Guaiacol 2.6, Formalin 2.6,
Creosote 13.02, Quinine 2.6
Methyl Salicylate 2.6,
Glycerine and Aluminum Silicate, qs 1000 parts.
Aromatic and Antiseptic Oils, qs

In Mammary Conditions

***i. e.*, Mastitis, etc.**

The analgesic effect of the emplastrum

Pneumo-Phthysine
TRADE MARK

is much appreciated. It also affords relief of the pathological conditions.

It has been found of value in practically every type of inflammatory condition and is widely used for the reduction of fever temperature.

Pneumo-Phthysine does not have to be heated before application. The medicaments are absorbed through the skin affording the well known therapeutic effects of the ingredients in the quickest possible manner.

Pneumo-Phthysine is not advertised to the public.

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.....

NON-SPECIFIC URETHRITIS

In pathological conditions the general practitioner's attention is sometimes called to the discomforting symptoms of pain during micturition. This condition is not uncommon and is generally due to an inflammation of the mucous membrane of the urethra, caused by abnormal substances in the urine. Some of these abnormal constituents of the urine are highly irritating in their passage through the urethra, resulting in an inflammation or true (non-specific) urethritis. In cases where the urine is charged with an abnormal amount of oxalate crystals, especially in concentrated urine, the friction in their passage over the urethral membrane always causes pain. In bacteriuria, when the contamination arises from some source of sepsis external to the urinary tract, pain frequently attends the voidance of urine. In febrile diseases, particularly in scarlet fever, diphtheria, follicular tonsillitis and pneumonia, when the urine is dark, concentrated and surcharged with pigments, irritation often attends the act of micturition. In some pathological conditions, intra-corporeal decomposition occurs, causing the urine to become putrid, ammoniacal and irritating. Inflammation of the prostate is most commonly due to gonorrhea, but there are instances where there is no history of such infection, in which the bacillus coli and staphylococcus are responsible for the irritation and pain experienced during the act of urination. Gouty albuminuria, especially in cases of old people, the excessive secretion of urea, causes frequent and "fiery" urinations. As blended in SANMETTO, the constituent genito-urinary remedies are presented in the most acceptable form. The preparation is not a strong extraction of the drugs, all of which are guilty of causing more or less nausea or stomachal disturbance when given in the crude and concentrated form, but a well-balanced "composite" of the milder properties of these drugs, and hence it is readily tolerated and it can always be relied on to exert a mild, soothing influence throughout the urethral passages. Whenever the patient complains of painful micturition the physician will do well to remember the advantages offered in the administration of SANMETTO. Furthermore, it will not interfere with the general treatment.

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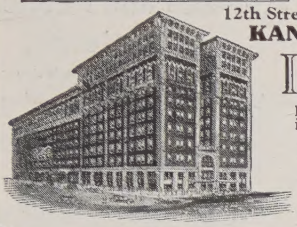

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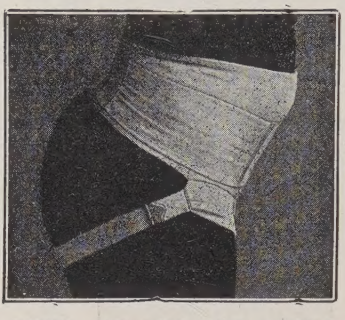

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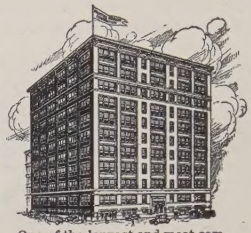

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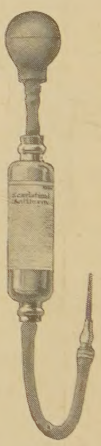

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